The
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SLUGGISH TIRE SALES KEEP INVENTORIES UP

Slackened Production Does Not Remedy Excessive Stock Situation as Bad Weather Continues And Dealers Fear Early Price Cut.

In spite of reduced production schedules and a better volume of orders from some sections of the country, it is expected that the end of June will see but little reduction in the high inventories of tires and tubes in the hands of manufacturers. The result will almost certainly be a still further slackening of production and reports are already being circulated that important manufacturers will stop production altogether for unusually early inventory or "vacation" periods.

The continued unseasonable weather has been a great barrier to consumer sales but replacement by dealers of the tires which have moved is constantly retarded by the fear of a price decline immediately after July first. On that date the period of price protection for tires sold on spring dating terms will have expired and it would not be surprising if some companies carrying high inventories will forego a profit or take a small loss on them in order to clear their warehouses.

Reduction Would Be Small

The reduction in tire prices which could be made without causing manufacturers to incur a loss on their inventories is not large in the case of any of them for the necessity of using high priced crude was general. The crude rubber commitment position of the principal tire producers has not differed to any material extent which has probably been responsible for the maintenance of tire prices up to the present.

If a reduction of 10 or 15% in prices were put into effect soon after July 1, there is always the danger that dealers would withhold orders as persistently as ever in anticipation of further reductions. Such expectations spring from the recent decline in the price of crude rubber which dealers believe should immediately affect the price of finished goods.

Tire manufacturers cooperating with the Rubber Association in the preparation of tire statistics have not yet received from the Association the final figures for May although the usual preliminary report has been delivered. Distribution of the latter is limited to manufacturers contributing to it, but it is understood to indicate no marked change in the inventory position in May. During the latter part of that month production was off about 20% from the peak which had been reached several weeks before.

General distribution of the Association's figures for April was made on June 11. On a 100% basis they showed that the inventory of casings was about 450,000 heavier at the end of April than at the end of March. As compared with the same date a year ago, the inventory was 3,300,000 casings heavier.

During April shipments of high pressure cord casings exceeded production but additions were made to the stocks of balloon and fabric tires. Second quality cord tires appear to have effectually checked the sale of fabric tires, the inventory of which has mounted steadily since last October. During the first four months of the current year production of fabric tires by tire manufacturers reporting to the Rubber Association has exceeded shipments by 654,972 casings.

The inventory of inner tubes also continued to increase during April. At the end of that month, inner tube stocks stood at 20,674,000 tubes, on a 100% basis.

Acknowledgment

We desire to take this means of thanking the many friends of The Rubber Age who favored us with their sincere congratulations and expressions of appreciation on the June 10 issue. That so many readers were sufficiently pleased to write or telephone us strengthens our determination to make every issue worthy of their confidence. The suggestions which have been made with reference to future issues will be kept in mind and it is hoped that others will be forthcoming.

TIRES FOR NEXT WAR ALREADY ORDERED

Army Officer Completes Plans in Akron Whereby Delivery of 105,000 Tires Will Commence With Any Future Declaration of War.

A survey of the rubber industry in its relation to industrial mobilization in the event of war has been completed by Captain Clarence Longaere of the United States Army who has been stationed at Akron for some months. As the officer was ready to leave Akron, he said in an interview that the War Department had made arrangements with various Akron rubber companies for delivery within thirty days after a declaration of war of 80,000 pneumatic tires. The delivery of 25,000 solid and cushion tires had also been arranged for.

The disorganization in the securing of supplies which marked the early days of the World War is to be avoided in the event of another conflict through the completion in advance of such plans for all essential industries as has been done in the case of rubber. In each case an effort is made to arrange for the materials in such a way that civilian needs can be cared for as in normal times.

The War Department has taken a keen interest in crude rubber also since it believes that it would be difficult for the United States to receive an adequate supply in case any future war should be centered in the Pacific. For that reason the growing of rubber in Central or South America has been looked on with favor. At the time of the congressional investigation of the crude rubber situation last January, the Secretary of War was heard in executive session.

Archer-Strauss to Build

The Archer-Strauss Rubber Co. of Framingham, Mass., manufacturers of waterproof rubber specialties, has plans under way for the expansion of its present plant in order to provide for the installation of additional equipment which will materially increase its output. The plans call for the construction of a one and two story addition, 110 x 200 ft., at a reported cost of about $75,000.

SETTLEMENT MADE IN LITHOPONE LITIGATION

N. J. Zinc and du Pont Decide to Settle Suit on Infringement of Patent Rights on Manufacture of Lithopone—du Pont Now Licensed.

Settlement of the suit of the New Jersey Zinc Company against E. I. du Pont de Nemours & Co. for alleged infringement of patent rights in the manufacture of lithopone has been effected by the licensing of the du Pont Company to use the processes and make the product controlled by the New Jersey Company, according to the *Oil, Paint & Drug Reporter*. Coincidentally, it was disclosed that the New Jersey Zinc Company has concluded arrangements with most of the other leading lithopone makers, whereby they will use the New Jersey Company's patented processes under license.

Alleging infringements of five patents covering improvements in the manufacture of lithopone, the New Jersey Zinc Company last September filed a bill for injunction in the United States District Court at Wilmington, Delaware, against the du Pont Company. The bill charged that the defendant company was "using and causing to be used" methods of manufacturing lithopone embodying inventions claimed by the plaintiff. The New Jersey Company sought an injunction and preliminary injunction, pending the suit, enjoining the du Pont Company from infringing directly or indirectly on the rights of the plaintiff and infringing on the latter's patents. Costs and damages and such other relief as the circumstances might require were also asked.

The alleged infringements applied to the rights in the grade of lithopone known as "albalith". This product is patented by the New Jersey Zinc Company, which had registered the name as a trade-mark and also patented several of the vital steps in the manufacturing process.

Following adjustment and disposal of the du Pont suit, the New Jersey Zinc Company concluded licensing arrangements with the Grasselli Company, Inc.; the Glidden Company, St. Louis Lithopone Company, and the Eagle-Picher Lead Company. Negotiations for licensing the Sherwin, Williams Company to manufacture lithopone under the processes controlled by the New Jersey Zinc Company are now in progress.

Thus far, continues the statement, the only prominent lithopone manufacturing company which has not effected an arrangement for the use of the New Jersey processes is the Krebs Pigment & Chemical Company, Wilmington.

NEW SERVICES PLANNED FOR FOOTWEAR DIVISION

Monthly statistics on the production, sales and inventory of rubber and canvas footwear will be prepared regularly in the future, according to plans approved by members of the Footwear Division of the Rubber Association at a recent meeting. Similar figures are already being prepared for several other divisions of the association. As is the case with other statistical services, distribution of the figures will be limited to companies contributing to them.

The Footwear Division also endorsed a movement for the standardization of sizes of cartons and containers used by rubber and canvas footwear manufacturers. Data as the dimensions of the various containers now in use will be gathered and a committee will study them and recommend the adoption of certain sizes as standard.

DUTCH COMPANY FORMED TO MILL OWN NATIVE RUBBER

Another step in the movement to have Dutch native rubber remilled in the islands and exported directly to consuming markets from Dutch East Indian ports is seen in the recently announced establishment of the Nederlandsche Rubber Unie in Amsterdam. At the present time nearly all the Dutch native rubber is shipped to Singapore for treatment and re-exportation, but a number of projects for changing the practice have been launched. The new company will have a capital of 7,500,000 guilders, part of which has been placed among rubber growers in the Dutch East Indies.

SEEDS AT COST USED TO ENCOURAGE PLANTING

Philippine Legislature Passes Law to Permit Distribution of Rubber Seeds and Seedlings at Cost — Experimental Rubber Station Also Provided For in Act.

The Philippine government has taken a definite step to encourage nation-wide planting of rubber in the Islands through the recent distribution by the Director of Agriculture of rubber seeds and seedlings to agriculturists of any province in the Islands at a price not exceeding cost. This action is in accordance with the provisions of Act 3230 passed by the Legislature at its last session, which made a sum equivalent to $31,650 available for this purpose. The distribution is subject to such rules as the Director of Agriculture may prescribe and the Secretary of Agriculture and Natural Resources approve.

Sections 2 and 3 of the act also provide for the establishment out of this sum of an experimental rubber station in the Islands under the direction of the above officials, who shall have charge and supervision of the station and furnish to the planters and the general public suitable information and instructions.

RESTRICTION SCHEME AUTHOR PASSES AWAY

Sir James Stevenson, Adviser to British Colonial Secretary, Dies at Age of 53—Well Known for Work on Behalf of Rubber Growers.

Sir James Stevenson, author of the famous rubber restriction scheme which bears his name, died at Holmbury, England, on June 10. He was 53 years old.

Lord Stevenson's chief business interest was in John Walker & Sons, Ltd., distillers at Kilmarnock, his birthplace in Scotland, of which company he was managing director for years.

With the advent of England into the World War, Stevenson came into prominence through his war work with the British Government. From 1915 to 1917 he was director of area organization of the Ministry of Munitions, vice-chairman of the Advisory Committee, member of the Central Reconstruction Committee, a member of the Munitions Council for Ordnance and Chairman of the Council Committee on Demobilization and Reconstruction. From 1919 to 1921 he was Surveyor-General of Supply for the War Office and at the same time a member of the Army and Air Councils.

But it was during his post-war career as personal commercial adviser to the Secretary of State for the Colonies that Lord Stevenson became so well known to Americans. The slump in the world trade in rubber following the general economic crisis in the post-war period having materially reduced the earnings of British rubber plantations in the Middle East, the growers appealed to the government for aid. This resulted in the appointment of a Rubber Investigation Committee of which Lord Stevenson was named chairman.

SIR JAMES STEVENSON
Chairman of the Committee which originated the Rubber Restriction Scheme.

The Stevenson committee, as it came to be called, evolved the plan for arbitrarily raising the price of rubber through a restriction on exports from British colonies, which, from the name of its chairman, became known as the Stevenson restriction scheme. Since its inception in 1922, the scheme has been widely discussed and has had a profound effect on crude rubber prices. It is still in effect and Lord Stevenson continued until his death his connection with the committee charged with advising the Secretary of State for the Colonies concerning revision of it.

In recognition of his war services Stevenson was made a baronet in 1917. His continued activity with the British government as commercial adviser led to his being made first Baron of Holmbury in 1924. The French Government made him a Commander of the Legion of Honor.

The influence of Lord Stevenson was said to have been responsible to a large extent for keeping Great Britain from adopting strict prohibition during the war.

Rubber Division of A.C.S. to Hold A Symposium on Crude Rubber

Plans Announced by J. M. Bierer for Philadelphia Meeting in September Contemplate One of the Most Interesting Meetings of Rubber Division Ever Held.

Chemists, rubber executives and others who attend the Fall meeting of the Rubber Division of the American Chemical Society in Philadelphia on September 8-10 can look forward to one of the biggest events in the history of the division, according to an announcement just made by John M. Bierer, Chairman.

Mr. Bierer has been working for some time on his plans for this meeting and has already received assurances of the cooperation of many of the leading rubber technicians in this country and abroad, for a comprehensive symposium on crude rubber.

The discussion will include botanical, chemical, technical and engineering problems. To deal properly with all these, experts of international reputation have been assigned to discuss the various aspects of the subject.

The basic idea of the symposium is to present new facts and ideas and not to review work already known and information which is common knowledge or which can readily be obtained elsewhere. In other words, the speakers will confine themselves to new information and data which they will present in detail and discuss critically. The promise of new facts and original ideas from leading authorities indicate the importance of the symposium to all rubber chemists and technologists.

Eminent authorities have already promised to discuss each of the following topics and arrangements are nearing completion for other prominent speakers in other problems of raw rubber:

- Scientific developments in the plantation rubber industry.
- Wild rubber, South American and African.
- Guayule rubber, its botany, chemistry and technology.
- Synthetic or artificial rubber.
- Alternative materials for rubber.
- Rubber as a national asset.
- The physical structure of rubber.
- The examination and testing of rubber.
- A comparison of the physical properties of raw rubber with those of compounded vulcanized rubber.

A banquet is planned for Thursday evening, September 9, at which some of the leading executives of the American rubber industry are to be present.

Dividend Declared by General

The General Tire & Rubber Co., Akron, Ohio, has announced a quarterly dividend of 1¾ per cent on its preferred stock, payable July 1, to stockholders of record on June 19.

Tree For Rubber Exchange

"What is a Rubber Exchange without a rubber tree?" At least, that question might have been asked some time back. Today, however, the Rubber Exchange has its tree and the brokers who have traded in rubber for so many years may learn at first hand what a rubber tree looks like. Due to the generosity of President F. R. Henderson, the Rubber Exchange of New York now boasts a dwarf variety of the *ficus ponderata*, a rubber tree brought from Central America. It is planned to place the tree outside the entrance to the Exchange if it flourishes and the members may yet tap the tree for latex. The illustration shows Secretary W. Dutton standing beside the tree.

Dunlop Increases Production

According to E. B. Germain, president of the Dunlop Tire & Rubber Co., Buffalo, N. Y., plans have been completed for increasing the daily tire production of that plant from 6,000 to 10,000 tires. This increase is made possible by the recent completion of a new building, 120 x 562 feet.

AKRON RECLAIMING COMPANY INCREASING ITS PRODUCTION

In order to meet the increased demand for reclaimed rubber the Akron Rubber Reclaiming Company of Barberton, Ohio, expanded its personnel by the addition recently of one hundred new employees, bringing the total number of workmen in the plant to 225. The present capacity of 10 tons of reclaimed rubber a day will be thereby increased to 25 tons a day, according to officials of the company.

The Akron Reclaiming Company was started in the fall of 1924 and has had a steady growth. Workmen have been employed for the past three months installing new machinery used in the reclaiming process, and the additional facilities will make possible the future expansion of the business.

Swimming Sleeve Perfected

The Par Rubber Co., of South Maple St., Bowling Green, Ohio, is reported to have acquired the rights to a rubber swimming sleeve which is said to aid in supporting a person in the water. The inventor is George Evans. In addition to this article, the company expects to begin the manufacture of toys and balloons. Its factory, which was started late last year, has been completed and is expected to start operating shortly.

Fire Destroys Plant

The plant of the Virginia-Carolina Rubber Company of Richmond, Virginia, was recently destroyed by fire, with an estimated loss of $75,000. The company manufactures the Va-Car tire patch and other tire accessories and is one of the largest tire patch manufacturing plants in the country. For the present the company will maintain its headquarters in the National Bank Building, but it is expected that plans will be made shortly for the rebuilding of the plant.

Inspect Goodrich Factory

A group of Cleveland production managers recently visited the factory of the B. F. Goodrich Co., in Akron and made a tour of the tire, mechanical and footwear departments. The visit was made under the auspices of the Cleveland Chamber of Commerce.

New Malayan Magazine

The Association of British Malaya in London has commenced publication of a new monthly magazine which is intended to represent the views of those who are connected with or interested in the Federated Malay States and the Straits Settlements. The magazine is well printed and illustrated with photographs. The first issue contains a portrait of Sir Frank Swettenham and an article by him on the problems which confront Malaya during the current year. In future the publication will devote considerable space to the rubber industry, and this receives its due share of notice in the inaugural issue.

STEDMAN TAKES INSURANCE COVERING 181 EMPLOYEES

Executives of the Stedman Products Company, rubber goods manufacturers, at South Braintree, Mass., have announced the adoption of a group life insurance policy which will provide protection for their employees without cost to the workers themselves.

The policy, which has been placed with the Prudential Insurance Company of America, grants coverage in amounts ranging from $1,000 to $2,500 according to the rank or position held by the worker. It involves a total insurance of $188,500 and covers the lives of 181 men and women.

Because of the large number of persons included in this group the insurance company was able to grant the policy without submitting the employees to a medical examination and for the same reason the protection was granted regardless of the age of the workers involved.

West Coast Assignment

Horace Miller, a member of the export department of the Firestone Tire and Rubber Company for more than ten years, has been appointed Pacific Coast division sales manager for that company.

Mr. Miller has represented the Firestone company in the Far East for many years, and left Japan just previous to the earthquake in 1923.

BOSTON RUBBER PAVEMENT SERVING SATISFACTORILY

The section of rubber block pavement laid at the entrance to the Boston City Hospital a year and a half ago is said to have demonstrated the effectiveness of rubber as a paving material. Heavy traffic of two winters and a summer leaves it still in good condition, showing very little wear. During the winter it was noted that ice and snow did not gather on the rubber pavement as on the surrounding concrete, thereby eliminating slipperiness. Traffic over the rubber section is almost noiseless and there is no vibration.

This paving was invented by R. F. Herrick, consulting engineer of Boston, and consists of blocks 12 by 6 inches and 2 inches deep laid in a plastic material of sand and cement directly over the street foundation. The edges were painted with hot asphalt when laid. These blocks were made in large part of reclaimed rubber and a wider adoption of such paving would no doubt be of considerable interest to the rubber reclaiming industry.

Schultz Corp. Chartered

The F. A. Schultz Rubber Mfg. Corp., Lodi, N. J., was recently granted a charter. Authorized capital is $150,000. Incorporators are Frederick A. Schultz, Hasbrouck Heights, N. J.; John Jackson, Clifton, N. J.; and Ernest Massey, Hackensack, N. J. Marinus Constant, Hackensack, is attorney for the new corporation.

To Make Rubberized Capes

The Pro-tex Rubber Co., Inc., New York City, was recently chartered at Albany to engage in the manufacture of rubberized capes and aprons from material supplied by other manufacturers. Authorized capital is $1,000. Incorporators are James Goldring, 30 Highland Ave., Yonkers, N. Y.; George S. and Sarah G. Lord, both of 570 West 156th St., New York City. Papers were filed by the company from an office at 2018 Amsterdam Ave., New York City.

Lower Ocean Freight Rates

As a result of negotiations instituted by the Traffic Committee of the Rubber Association with the steamship conference having jurisdiction over shipping to Black Sea and Levant ports, the ocean freight rate for shipments of tires and tubes to such ports has been reduced from $20.00 to $18.00 per ton. The rate on tires and tubes moving to Adriatic ports has also been reduced from $18.00 to $14.00 per ton. At an early date the Traffic Committee will take up the question of a reduction in the rate on tires and tubes to Norwegian ports.

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CATALPO!

GRASSELLI-NATIONAL BRIEFS SUBMITTED

Final Briefs and Replies Have Been Submitted in the Grasselli vs. National Aniline Suit—Decision By Judge Hand Not Expected for Months.

After many months of litigation the final briefs and replies in the Grasselli Chemical Company vs. National Aniline & Chemical Company suit on the Hofmann-Gottlob patent on accelerators have been filed and a decision may be expected by Judge Hand about the middle of the summer. The case was tried in the U.S. District Court in February and early in March. On May 8 it was reopened to admit the testimony of W. W. Weber, a witness brought over from Germany to testify for the Grasselli Chemical Company. (A full report of this testimony appeared in THE RUBBER AGE, May 25, 1926, page 120.)

Following the testimony of Mr. Weber, briefs were submitted by both sides and on Tuesday, June 8, they were argued before Judge Hand. Reply briefs were subsequently submitted, completing the case as far as any court work was concerned.

The brief for Grasselli, submitted by the attorneys (Mayer, Warfield & Watson) consisted of 214 pages of which 162 were devoted to the main brief and the balance to a reply to defendant's brief. In the main brief was given a history of the patent in suit, its contribution to the practical art, the specific counts on which infringement was claimed, the defences relied upon, alleged prior uses, position of the patent in the art of rubber vulcanization, and the extent of use of modern accelerators.

In the reply to defendant's brief, reference was made to the Kratz argument and specific replies were made to the eleven defences controverted. (Space does not permit of a complete summary of the claims and defences of each side. Editor).

In the brief for the National Aniline & Chemical Company, submitted by the attorneys (Pennie, Davis, Marvin & Edmonds) the subject of vulcanization was reviewed in the light of present knowledge and a summary of the patent in suit was also given. Following were given eleven defences, a number of which stated that the claims in the patent in suit were invalid followed by detailed reasons for such claims. In addition, claims were made showing that the sale of DPG and TPG by National Aniline does not constitute infringement, that the patent is vague and indefinite and that the proof of Grasselli's title to the patent in suit is insufficient.

The reply brief of the defendant consisted of replies to plaintiff's brief on the following points: Revolutionary achievement and landmark of the disclosures in the patent; use of Hexamethylene-tetramine and the licenses for its manufacture under the patent in suit; failure to appreciate the constant; the first eight defences and conclusion.

(c) Herbert Photos

The Balloon with which Ward T. VanOrman, pilot of the Goodyear Tire & Rubber Co., won the James Gordon Bennett International Balloon Race on May 30 in Belgium after traveling 528 miles through storms.

Rosslyn F. Caverly

Rosslyn F. Caverly, well-known to many people in the rubber industry through his forty years connection with the shoe and rubber interests in New England, died on May 28. For ten years prior to his recent retirement, Mr. Caverly was active with the William F. Mayo Company in the rubber business in Boston.

TRADE RESTRICTIONS TO BE STUDIED BY BUSINESS MEN

Artificial barriers in the path of international trade, including governmental and private monopolies of materials, will be studied and suggestions made for their removal by an international committee of business men appointed by the International Chamber of Commerce. On account of the attention recently directed to the restrictions imposed on the international movement of crude rubber, that commodity is expected to figure in the survey. The United States will be represented by Julius H. Barnes, Walker D. Hines, F. Edson White and John N. Willys. The latter is president of the Willys-Overland Company of Toledo, Ohio, and is known to be well informed on the importance of an adequate supply of rubber to the progress of the automotive industry.

The international committee will hold its first meeting in Paris on June 22. The committee will report the result of its survey and its recommendations to the Stockholm meeting of the International Chamber in June, 1927.

Norwalk Declares Dividend

The Norwalk Tire & Rubber Co., Norwalk, Conn., recently declared a quarterly dividend of 20 cents on its common stock, payable July 1 to stockholders of record on June 20. The regular quarterly dividend of $1.75 on preferred stock was also declared at the same time. It had been previously reported that the common stock dividend was at the rate of $1 a year but this was denied by officials of the company.

Overman Sales Increase

An increase of 32% in sales for the first four months of this year compared with the corresponding period of last year has just been reported by the Overman Cushion Tire Co., Belleville, N. J. The total sales for the period this year were $927,500.

REVISED MANUAL FOR TIRE AND TUBE EXPORTERS READY

A revised edition of the Rubber Goods Exporters' Manual has been prepared by the Rubber Division of the Department of Commerce for distribution to American companies interested in the exportation of tires and tubes. The manual is one of a series covering all sorts of rubber goods.

The present edition of the section dealing with tires and tubes contains late statistics and information on tire markets throughout the world. One hundred ten different territories receive separate treatment. For each one the number of automotive vehicles in use is given along with statistics showing the consumption of tires and the countries from which they have been imported in the past.

Through cooperation with the Rubber Association of America the Rubber Division has arranged to receive prompt statistics as to the activities of foreign tire manufacturing countries and such information has been used liberally in revising the tire and tube manual. A new section of the manual includes a review of competition in international tire trade.

New Exchange Ruling

A resolution has been approved by the Board of Governors of the Rubber Exchange to permit the extension of the limit of trading in July and in future current months from the 10th of the month to the fifth day before the end of the month, in general the 25th.

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RUBBER CONSUMPTION AND IMPORTS DECLINE

Less Rubber Used in May Than in Any Previous Month of Year—Imports Decline Also But Stocks Increase—Large Deliveries Forecast For June.

Although crude rubber imports in May were lower than in any previous month of 1926, the tonnage brought in was more than sufficient to cover the month's consumption which also declined to a new low for the year.

The May imports according to the Rubber Association's estimates which are computed by allowing an average weight of 198 pounds for every package of rubber entering the country during the month, amounted to 30,411 long tons.

Consumption during the month, according to other Rubber Association figures raised to 100%, was 29,264 long tons. In the two previous months the consumption was only slightly below 33,000 tons. The decline in May brings the 1926 consumption to date a full 4,000 tons below the amount used in the corresponding period of 1925. Furthermore, it seems assured that the June consumption will not surpass but probably fall below the May figure. If that happens, the difference between the 1926 and 1925 consumption will be more greatly increased since in June, 1925, almost 36,000 tons of rubber were used, it being one of the largest months of that year.

According to the Rubber Association, imports during the first five months of 1926 have amounted to 178,530 long tons as compared with 151,450 in the same part of 1925. Since consumption is at a slower rate while the imports are at a higher rate, the opportunity to increase stocks within the United States is obvious.

The Rubber Exchange has reported that the rubber arrivals during the first half of June amounted to 15,414 tons which is at a slightly more rapid rate than entries were made during May. Since consumption during June is not expected to be any stronger than in May, if as strong, another addition in stocks may be expected. This statistical position is taken to account for the present weakness of the crude rubber market.

The average price per pound of imported rubber continued in May the decrease from the February peak of 80 cents. In March the average price was down to 75 cents, in April it reached 62 and for May it has settled to 55½. The gradual completion of the delivery of the high priced forward committments taken by manufacturers following the boom at the end of last year is indicated thereby. In each of the months mentioned the import price has been considerably above the average spot price.

CATALPO!

APPEAL WITHDRAWN IN TIRE CHANGING CASE

Suit Over Substitution of Tires at Automobile Show Settled When Dunlop Decides Not to Pursue Case and Plaintiff Agrees That Case Should Be Dropped.

In the Court of Appeal in London the Dunlop Rubber Co., Ltd., has withdrawn its appeal for judgment or a new trial in an action tried before the Lord Chief Justice of England and a special jury last January and February.

The plaintiffs in that action, G.W.K., Ltd., automobile manufacturers, and the Associated Rubber Manufacturers, Ltd., manufacturers of Bal-lon-ette tires and tubes, claimed damages against Dunlop for alleged trespass and for a wrongful and malicious interference with their contractual rights. They complained that when two G.W.K. cars, fitted with Ballon-ette low-pressure tires were sent to the Glasgow Automobile Exposition, the defendant wrongfully removed the tires and substituted others of its own manufacture.

The Dunlop Company denied the allegation and said that the cars were exhibited with Bal-lon-ette tires throughout the show except on the first day, and that if the action alleged was taken (which was denied) there was just cause for doing so owing to a previous verbal contract with the owner of the stand upon which the cars were shown. Alternatively, the company pleaded the acts complained of took place in Scotland, and by the law of Scotland no action lay in respect of the acts complained of.

At the trial the jury found for the plaintiffs and awarded G.W.K., Ltd., £500 ($2,500), and Associated Rubber Manufacturers, Ltd., £2,000 ($10,000) damages.

Upon further consideration the Lord Chief Justice held that the defendant had knowingly committed a violation of the Associated Rubber Company's legal right by interfering with the contractual relations existing between them and the G. W.K. Company. He thought defendant so interfered with the intention of damaging Associated Rubber Manufacturers, and that that company had been thereby damnified. He therefore entered judgment as found by the jury.

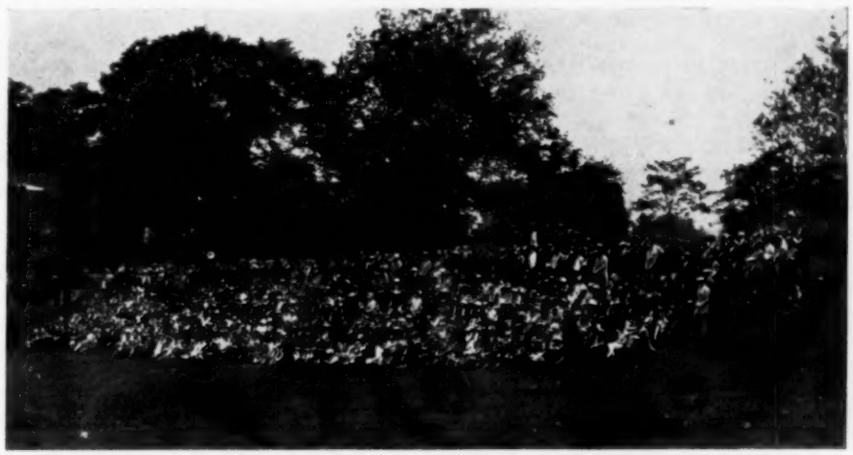
The Dunlop Company appealed the case and retained some of the best legal talent of the country to pursue it, but when the appeal was called it was announced that on the basis of facts not considered in the previous trial and having to do with the changed management of the defendant company, an agreement had been reached for a withdrawal of the appeal on the terms already arranged. It was accordingly dismissed.

Triangle Increases Production

The largest production in the history of the Triangle Tire & Rubber Co., Canton, Ohio, was recently reached when a schedule of 600 tires a day was adopted. According to M. C. Wyatt, about 50 per cent of the total production is in balloon tires, while 10 per cent is in truck and bus tires. In 1924 this concern was making about 300 tires a day and recently this had been increased to 400. The plant is now operating 24 hours a day.

U.S. Rubber Club Outing

The annual outing of the United States Rubber Club, an organization made up of the New York City employees of the United States Rubber Company, was held at Indian Point, on the Hudson, June 15th. A thousand members of the club and their guests made the trip to the Point and back on the Steamer Robert Fulton. The program included a ball game and other athletic events and dancing.



Some of the U.S. Rubber Co. Employees on Their Annual Outing

ASSOCIATION OF FARREL EMPLOYEES HOLD DINNER

The Veterans' Association of the Farrel Foundry & Machine Company, Ansonia, Connecticut, composed of 121 employees who have been with the company for 25 or more years, recently held its annual dinner. Only 31 of the number are pensioners. The average length of service of members of the Association is 33 years.

Charles F. Bliss, president of Farrel, addressed the gathering on the necessity of industrial concerns working for world peace since their ultimate progress is founded on that condition. Other officials of the company who were present at the dinner included Franklin Farrel, Jr., first vice-president, George C. Bryant, secretary, Carl Hitchcock, assistant secretary and F. M. Drew, Jr., assistant treasurer.

Tucker Increases Stock

The Tucker Rubber Corporation, Buffalo, New York, has filed a certificate in the office of the secretary of state to authorize an increase in the number of shares of its capital stock from 88,000, of which 13,000 are preferred, with $100 par value and 75,000 common without par value to 204,000 shares of which 4,000 are preferred with $100 par value and 200,000 shares are common stock without par value.

NEW AIRSHIPS LIKELY TO BE BUILT AT AKRON

Orders for Two Dirigibles Provided for in New Aircraft Bill Seem Assured for Goodyear-Zeppelin on Account of Size.

That the Goodyear-Zeppelin Corporation of Akron will construct the two giant dirigibles for the United States Navy, provided for in the naval aircraft bill recently passed by the Senate, seems to be assured.

The proposed airships, each with a gas volume of three times the ill-fated Shenandoah, are to be 785 feet in length and 125 feet in diameter, with a capacity of 6,000,000 cubic feet and a speed of about 80 knots an hour. The estimated cost is about $8,000,000.

The bill provides that both ships shall be constructed in the United States, and as the Goodyear-Zeppelin Corporation is the only commercial aircraft plant in the country capable of constructing ships of that size, Akron will undoubtedly land the orders.

According to the bill, construction of one of the ships shall be undertaken as soon as practicable, and not later than July 1, 1928. No orders for their construction have yet been placed, and Goodyear officials have declined to make any comment. The bill was preceded by recommendations to the committee by President P. W. Litchfield of Goodyear, and Dr. Karl Arnstein of Goodyear-Zeppelin. Both airships authorized by the bill were designed by Goodyear-Zeppelin engineers.

Rubberized Yarn Fabric

Casimir Zeglen, formerly president of the Zeglen Tire and Rubber Company at Chicago, has applied for new patents relating to his process of weaving tire fabric with rubberized yarn. The inventor is now experimenting with the use of various fibres, including linen and rayon. While the resulting fabric is sufficiently thick for one ply to form the carcass of an automobile tire, it is highly resilient. The rubberized yarn is made wet before weaving to prevent sticking.

American Auto Production

Of the 4,763,428 automobiles manufactured during 1925 in the six leading motor vehicle producing countries—the United States, Canada, France, Italy, the United Kingdom, and Germany—the United States accounted for 4,154,269 passenger cars, trucks and busses, or 87 per cent of the total. During the same year the United States accounted for but 61 per cent of the combined exports of these six countries, which amounted to 498,427 automobiles.

Tire Plant Sold

The plant of the New Tread Tire Company at East Palestine, Ohio, has been sold, the First National Bank of East Palestine being the nominal purchaser at $95,000. Just prior to the sale Referee in Bankruptcy Paul Jones of Youngstown conducted a three days hearing into the affairs of the bankrupt company.

Malayan Trade Decline

Rubber prices in British Malaya are at the lowest point since April, 1925, and as a result the value of the country's foreign trade in April was lower than for any time in the past 11 months, according to a report recently issued by the Department of Commerce. This decline, however, has caused no serious business depression as yet.

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DISEASES OF HEVEA SUBJECT OF REPORT

Department of Agriculture Publishes Survey by Pathologist Attached to Amazon Rubber Commission—Trees Now Beset by Many Fungi.

Another report resulting from the government's crude rubber survey has been published, this time by the Department of Agriculture which co-operated with the Department of Commerce in the work and contributed largely to the regional reports published under the auspices of the latter department.

The report now issued is entitled "A Pathological Survey of the Para Rubber Tree in the Amazon Valley". The author is Dr. James R. Weir, a member of the Bureau of Plant industry who was the pathologist accompanying the joint commission of the Department of Commerce and Agriculture which visited the Amazon in 1923 and 1924.

Dr. Weir's book treats fully of the diseases which he found attacking Hevea in its original home and is expected to be of interest and value to rubber growers in all parts of the world.

The author found that practical work on the fungous diseases of important crop plants had been completely neglected in the Amazon valley as compared with many parts of tropical America where a great deal has been done for the protection of field and forest crops. This applies particularly to rubber which the author attributes to the fact that those who have derived their living from the native Hevea trees have always preferred to move on to new areas rather than take the time or trouble to protect in any way the trees nearest at hand.

It was found that Hevea in the Amazon was attacked by a number of fungous diseases, including a number of leaf parasites as well as certain wood destroying and parasitic fungi acting on the root and stem. Accordingly, the author warns all prospective planters that cultivating Hevea in its original habitat would demand a fight against many natural enemies which the tree has, but he sees no reason why all the dangers could not be successfully met.

Particular treatment is accorded in the report to root diseases, stem and branch diseases and leaf diseases as well as those affecting the flower or fruit of the plant. Also, physiological disturbances and abnormalities, such as wounds and brown bast are discussed at length. The occurrence and prevention of mold in prepared rubber is covered. The fungi reported on Hevea by other investigators as well as those observed by Dr. Weir are included in a comprehensive list.

CATALPO!

CEYLON RUBBER BOOM MAY CAUSE TEA FAMINE

Tea Growers Are Inclined to Plant Reserve Areas to Rubber and Tea Production May be Insufficient—Cooperative Selling Approved.

A tea famine as a result of the rubber boom in Ceylon was predicted by H. K. Rutherford in his address at the recent annual meeting in London of the Ceylon Tea Plantations Company, Ltd. Plantation companies, he said, are planting almost all their new lands wtih rubber, and even his own company has now become a big rubber producer.

There are large areas of waste lands in Ceylon belonging to the Government suitable either for tea or rubber cultivation, and at recent sales they have fetched as high as £37.10s ($187.50) per acre, a price which is prohibitory for a low country tea proposition (unless the land is in close proximity to already opened land with the necessary road access), but not so for a rubber proposition. Consequently all the available waste lands in Ceylon are being planted with rubber instead of tea, and extensions in the latter product are of comparatively minor proportions.

Apart from Ceylon, according to Mr. Rutherford, in Southern India, Java, and Sumatra, owing to attraction of capital for rubber propositions, tea extensions are extremely limited, and the new areas being planted will be insufficient when at maturity to meet the demands of increased consumption.

"Taking into consideration the bearing capacity of existing rubber areas," Mr. Rutherford said, "and making due allowance for alditional acreages coming into tapping by 1930, and assuming a steady increase in tire consumption, we may, I think, go to the length of saying that there are fair prospects for producers up to the end of that period.

"Cooperative efforts are being made by producers with the object of stabilizing within reasonable limits the selling price of rubber, and thus, as far as possible, curtailing the speculative element in dealings in the product, which have been largely responsible for the wide price fluctuations of the past year. We have agreed to support the carrying out of proposals with that object in view, and if these efforts can be made effective, we consider it would be in the best interests of consumers and producers alike."

INCREASED DIVIDENDS FOR THREE MALAYAN COMPANIES

A group of three of the oldest established Malayan rubber companies which have just issued their reports, Lanadron, Ledbury, and Cluny, all show largely increased profits for 1925. The costs of the first two were appreciably lower and the Lanadron's dividend increased from 7½ per cent in 1925 to 45 per cent in 1925, while the Ledbury's dividend increased from 12½ per cent to 45 per cent.

Even more remarkable are the results disclosed in the report of the Simo, a small Javanese company. On a capital of £35,000 ($175,000) the company earned a net profit for 1925 of £65,484 ($327,420), and the dividend for 1925 is 150 per cent, against 40 per cent for 1924.

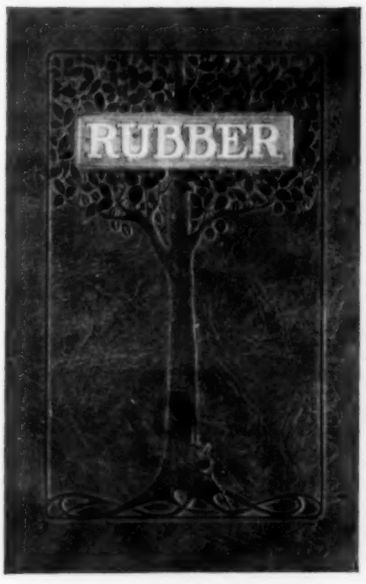
NEW GUINEA PLANTATIONS HAVE SATISFACTORY YEAR

A very satisfactory year's trading has been reported by the Kemp Welch River Rubber Estates, Ltd., an Australian enterprise which represents the combined efforts of several companies in New Guinea plantation work during the last 18 years. The yield of rubber for 1925 was estimated to be 50,000 lbs., but it amounted to 59,791 lbs. Cost of production, f. o. b. Port Moresby, after making allowance for depreciation, was 7¾ d. (15½ cents) per lb., while the average selling price for the year was 2s. 8d. (64 cents) per lb. The profit for the year was approximately $25,000. Better results are anticipated this year unless a considerable shrinkage in the price of rubber takes place.

Rubber Book Rubber-Covered

To the myriad of uses to which rubber is put has been added still another; this time it is as a cover for books. The illustration shows the front cover of a handbook on Rubber compiled by Francis R. Henderson, president of the Rubber Exchange of New York, for private distribution.

The cover is made of a composition of rubber and cotton linters and takes a beautiful finish. It is said to be more flexible and more durable than leather which it resembles.



MORE PROSPERITY MAY MEAN GREATER DANGER

Klabang Chairman Believes Good Times in Crude Rubber Industry May Over-Stimulate Planting and Bring Another Slump.

One of the most interesting of all recent surveys of the rubber situation and outlook was made in London at the annual meeting of Klabang Rubber Co., Ltd., by the chairman, Sir John Barlow.

"Restriction is still with us", said Sir John. "A world industry that cannot withstand the natural fluctuations of supply and demand appears to be insecure. Unless a suitable opportunity is found for removing restriction we may expect to see a great increase in planting outside its jurisdiction. Rubber at present is so remunerative that planting is an attractive speculation, and, judging by the reports of those who have recently visited Sumatra, a substantial acreage is being planted by the natives. Their methods are such that costs are low and yields for the early years are high. The essential difference between European and native planting is that we try to take a long view and the native does not.

"His idea is, briefly, the more trees he plants the more rubber he will get, and by reckless tapping he succeeds. We do not know how long these yields can be maintained by severe tapping when prices are high and resting when prices are low. Heavy bark consumption reduces the tapping cycle, but the native is indifferent, because he plants up more jungle to replace the wastage. The European method of concentrating on the health and development of the trees rather than on crop can only be justified by their period of productivity. At present this is unknown.

We think our method is the right one, but Professor L. Ph. le Cosquino de Bussy, director of the Commercial Museum of the Colonial Institute, Amsterdam, shows how rapidly the output of native rubber has increased. In 1921, comparing native output with the total production fro mthe Dutch Indies, the percentage was 8.8 per cent, which expanded in 1925 to 43.3 per cent. From this you can judge of thehold which the natives have obtained on the industry. We must, therefore, obtain high yields and low costs by seeds selection, bud grafting, or superior cultivation.

"I have taken a long view. My object is to emphasize that, we must be prepared to spend money in improving and safeguarding our fortunate position. We have entered a prosperous period, but the greater the prosperity the greater is the danger of another slump when new plantings become tappable. For 15 years the acreage of rubber planted has been governed by the price obtainable, and we may expect this to continue."

DAVIS SAILS FOR ANOTHER RUBBER PLANTATION VISIT

Edgar B. Davis, who is well-known among rubber manufacturers for his interest in the rubber plantation industry, sailed on June 23 for Europe on his way to the Middle East where he will investigate present conditions among the planting companies. It is understood that he will visit the Philippine Islands also for a more thorough survey of the rubber growing possibilities there than he was able to make at the time of his visit some months ago.

D. M. Figart, who is associated with Mr. Davis, has been in Europe for the last several weeks but is returning to the United States at an early date.

Mr. Davis' name has recently appeared in the papers in connection with a gift of several thousand dollars to Sir Henry Wickham, who despite his work in founding the Eastern rubber plantations, must depend upon contributions for a livelihood in his old age. The Rubber Association of America has been making small contributions at regular intervals for some time.

Crude Rubber Dealers

The P. P. Belford & Company has been organized in New York to deal in crude rubber, with a capital of $50,000. The incorporators are P. P. and E. M. Belford.

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WEEKLY MARKET REVIEW ON REQUEST

CANADIAN RUBBER INDUSTRY GAINS $20,184,316 IN 1925

The wholesale value of the 1925 production of the rubber industry of Canada was $77,595,762, according to a preliminary report published in Montreal. This figure represents an increase of $20,184,316 over the previous year. While the returns on the rubber tire and rubber goods section of the industry are incomplete, the value of the goods so classified in the statistics was $47,530,786 or $15,277,019 more than in 1924. The value of the rubber footwear produced in 1925 was stated to be $24,857,505. Thirty-seven rubber manufacturers contributed production figures.

The capital investment in the Canadian industry was $65,207,335, an increase of $9,046,405 over 1924. The number of persons employed in 1925 was 13,173 and the total salaries and wages paid amounted to $14,058,513. Imports of crude rubber increased from 32,299,840 pounds valued at $8,199,734 in 1924 to 44,407,421 pounds valued at $25,810,949 in 1925.

Goodyear Takes Inventory

A suspension of operations on June 28 and 29 while the mid-year inventory is being taken has been announced by officials of the Goodyear Tire and Rubber Company, Akron, Ohio. Operations are to be resumed on June 30 but on account of the nearness of the Independence Day holiday, a considerably curtailed schedule will be in effect. A full-time basis will be resumed on July 6.

The inventory and curtailment period will make possible the granting of vacations for the full week to some of the older employees.

Firestone Wins Suit

A patent suit involving the construction of the Firestone Maxi-Cushion tire, brought against the Firestone Tire & Rubber Company by the claimants of a prior right to the tire, has been decided in favor of the Akron company.

The suit, which was tried in the Federal court of Brooklyn, was brought by E. C. Cadwell, E. C. and W. D. Johnston and Frank M. Ashley, all of New York.

Cocoa Clearing Association

In accordance with the recent decision of its Board of Managers to discontinue trading in rubber, the Cocoa and Rubber Clearing Association of America, Inc., has filed a certificate in the office of the Secretary of State for New York changing its corporate name to New York Cocoa Clearing Association, Inc.

CATALPO!

Current Rubber Opinion Abroad

—as gleaned from the editorial pages of foreign contemporaries.

COOPERATIVE SELLING

For ourselves, we do not believe that any central selling agency for rubber from the British Mid-East rubber producing countries ever will be formed. The reason why? To find the reason why one has only to look back to all that happened before the Governments of Malaya and Ceylon brought in the law compulsorily to restrict the export of rubber above a certain percentage. There was then talk and yet more talk of co-operation but the spirit of co-operation is non-existant and never can exist in an industry such as the rubber growing industry in which there are so many small-holders.

On the other hand, every one, even the smallest of the small-holders, now understands and appreciates the value of the Stevenson Restriction Scheme. It is, therefore, to the Stevenson Restriction Scheme that British rubber growers must cling until they are quite sure that the world wants all the rubber they can produce. British rubber growers must see to it that the British Government clearly understands that they desire the Stevenson Scheme retained. If they do not make this clear, the British Government may be stampeded by American protests into abolishing the Stevenson Scheme prematurely—*Malayan Tin and Rubber Journal* (Ipoh)

REWARDING WICKHAM

We are glad to note that America proposes to make a substantial recognition of her debt to Sir Henry Wickham on the occasion of his 80th birthday which falls due on the 29th (of May). Mr. Edgar B. Davis has set the ball rolling with the offer of £1,000 to a "Wickham Reward from America", and the Rubber Association of America has been invited to support the good work. No gift could have been more completely earned.

Whatever the worst critics of Great Britain's rubber policy may have to say, it is a plain statement of fact that the great American rubber industry was only made possible by British enterprise at a time when the amazing development of the trade was quite unforeseen. It is no less true that the era of plantation rubber might have been delayed for a generation but for the daring and resource of the man who brought back the seeds from the Amazon Valley at a time when they represented little more than a scientific experiment.

America has reaped incalculable wealth from that adventure, and the use made of it subsequently. If then instead of reviling the measures this country has taken to conserve its hardly won interests, American rubber plutocrats combine to do honor to the original provider of their multi-millions, it will be a gracious gesture much more in conformity with the true state of things than the attitude of hostility they have chosen to adopt whilst making record profits out of the situation.

—*The Rubber Age* (London)

FRIGHTENED PLANTERS

A few months ago, valuers and surveyors in Malaya were being run off their feet. It looked as if a great planting boom lay ahead. Then suddenly the high tension ceased. There were sundry explanations of that. It may be that an official tendency to regard time as the thing of least consequence was one of them, but the greater was a discovery that the money market in London was not as elastic as it was from 1908 to 1912.

There was yet another cause, and for convenience it may be summed up as Hooverism. About the time when new planting enthusiasts began to warm up Hooverism became militant. It denounced everything British. It pretended that rubber growing in Liberia and the Philippines could be made a practical proposition. It "boosted" even Mexico, talked in millions of acres, and the British investor became a bit nervous. He knows little about the Philippines, less about Liberia, and nothing at all about Mexico. He decided to turn his attention to the four per cents. The people already in rubber smiled. They knew that the American bombast meant very little for any date and nothing at all for a solid eight to ten years. They knew that not all the Hoovers and Firestones, and Borahs that even America contains can prevent the price of a very necessary and very scarce commodity being very high. And, as Mr. Chew Woon Poh said at the meeting of the Jeram Haunton Company the other day, they are quite sure that before America can produce a ton of rubber by Liberian and similar efforts they will be able to build up such reserves as will enable them to face ten times worse competition than American bombast will ever produce.

The American business man has the reputation of being abnormally 'cute, and possibly he does play a kind of poker game with considerable dash and bluff. But it seems to us that he is not a long date man. Put a thing under his nose, and he will probably snatch it from you. Put it a yard away, and he will probably explain later on that he was so unlucky as to have left his spectacles at home for the baby to play with.

In the slump days no American user seemed to see farther than the next auction day. Five minutes reflection ought to have shown him that to mercilessly squeeze the industry was to put an end to all new planting, for even Mr. Hoover himself admits that the slump had this effect. Also he should have seen, but did not, that he was compelling reprisal, and that the British are not paltry enough to be afraid of resorting to it.

Strangest of all, however, was the failure to see that all the tall talk about great schemes in outlandish places, was sure to hold off British capital from planting in the very best rubber producing areas the world possesses. Given the fair deal British planters would have acted generously. Threatened as they have been, they would be mere soft fools if they did not get every cent they can out of every acre of rubber they possess. Even now it would pay the Americans to begin talking sense and have a little more respect for the principle of "live and let live."

—*The Straits Times* (Singapore)

ALTERNATIVE REVISIONS

It is true, of course, that all the forecasts indicate production in excess of consumption, and we would like to see that avoided, but we doubt whether it would be perfectly sound policy to avoid it by what America would most certainly describe as a breach of good faith. We firmly believe that the retention of restriction is desirable for at least another year. We would go farther and say that it would be sound policy to keep the system alive for a much longer period. Also we would like to see a declaration that while increases of ten per cent above standard will be allowed as long as the price warrants them a reduction to 100 of standard will be made at once if the effect of such release is to send price below 1s. 6d.

We hope, however, that the situation will be saved by a conservative tapping system on all the large estates. If they keep to alternate day tapping rigidly, the 100 of standard will not be exceeded, and unless trade moves unfavorably it will be found that the surplus at the end of the year will not be very great. Next year the position should be easier all around.

—*The Straits Times* (Singapore)

New Members of Exchange

Among those recently admitted to membership in the Rubber Exchange are Edison S. Lenhart of Herron, Rodenbough & Meyer, Inc.; Leon L. Eis of Joosten & Janssen; H. Wilson Taylor, Jr., of Taylor & Kerr; and Kenneth S. Guiterman of Henry Gardner, Guiterman & Co., Inc.

Addition for Mid-State

In order to meet the increased demands for its products the Mid-State Rubber Company of Evansville, Indiana, manufacturers of hard rubber goods, will begin work at an early date on a one-story addition to its plant, 33 x 80 feet.

NEW SOLID TIRE FACTORY BEGINS OPERATIONS SOON

A company to be known as Raritan Rubber, Inc. has been organized in New Brunswick, New Jersey, to manufacture solid rubber tires for commercial vehicles. The tires will be marketed under the trade name of "Raritan". The company has purchased a new building and is installing the most modern equipment for the production of solid tires. Operations are expected to begin within the next thirty days.

John J. Burke, the president of the concern, has handled the sale of solid tires for the Kelly-Springfield Company in New York City for the past ten years and is well known to the trade. Maxwell M. Kahn, vice-president has for the past two years been technical director of the Overman Cushion Tire Company and was for seven years assistant chief chemist in charge of factory operations for Kelly-Springfield. Alfred Foster, the treasurer, is president of the Metropolitan Truck Tire Company of New York. Russell Watson is the secretary.

May Move Factory

Charles Burlock, president of the Eagle Rubber Company of Milwaukee, Wisconsin, is reported to be negotiating for the removal of the factory to Eureka, Kansas. The firm employs around sixty girls and manufactures a line of rubber aprons, caps, raincoats, etc. for the jobber trade.

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CHANGES IN PERSONNEL AT GOODRICH SEATTLE BRANCH

W. D. Albright, manager of the northwest branch of the B. F. Goodrich Company in Seattle for the past ten years, has resigned. Albright has been in the rubber business on the Pacific Coast for the past thirty-two years, twenty-two of which have been in the employ of the Goodrich Company.

He will be succeeded by F. D. Ranyard who has been in charge of the mechanical goods department of the Seattle branch for the past five years.

Wilson C. Brooks, former operating manager of the Seattle office, has been transferred to a temporary assignment at the Portland branch. F. G. McCammon of the Denver branch will succeed him at Seattle.

SALES PROMOTION MANAGER SELECTED BY STAR RUBBER

Arthur O. Roberts, recently editor of the Tire Trade News of the Miller Rubber Company, has been appointed manager of advertising and sales promotion for the Star Rubber Company.

Roberts was at one time assistant advertising manager of the Velie Motors Corporation and has been connected with the Maxwell, Chalmers and Chrysler companies in advertising and dealer development work.

Borah Resolution Passed

The resolution introduced into the Senate by Senator Borah calling on the Secretary of State and the Secretary of War to furnish all the information in their possession concerning the land concessions made by Panama to a British mining corporation, has been passed. No announcement has been made as to what information or correspondence the Departments were able to supply. The resolution was prompted by a statement circulated by R. O. Marsh to the effect that the area conceded included most of the Panama lands suitable for rubber and that the ultimate safety of the Panama Canal might be menaced by the holdings.

Jar Ring Bulletin

of using rubber jar rings a second time has been issued by the Department of Agriculture and brought to the attention of housewives throughout the country. The Department points out that the heat of the canning process prevents the rings from retaining their original quality and therefore being fully suitable for using again. Folding and stretching tests are suggested to determine the quality of the rings at hand.

CATALPO!

CHEMIST DISCUSSES SYNTHETIC RUBBER

J. F. Norris Asserts Practical Process Can Be Found and States that $500,000 is Needed to Finance Research—Intensive Study Urged for Three Years.

In a statement made recently Dr. James F. Norris, president of the American Chemical Society said that with proper financial support, science could develop in about three years a synthetic rubber that would be economically practical.

Dr. Norris, who is professor of organic chemistry in charge of graduate students at Massachusetts Institute of Technology, said that he believed $500,000 would suffice to support the research necessary to perfect such a process.

He stated that some work along these lines already was being done under his direction at the institute, but that much similar work would be required for the development of a successful process which would prove sound economically.

"I would guarantee," he said, "that any good chemist could start with petroleum, for example, and make rubber. Rubber has been made, in fact, from the hydrocarbon obtained by running turpentine through a hot tube. But this, of course, is entirely impracticable and far too expensive a process for industrial use.

"The problem must be studied intensively, not by a few experts but by many, before we may hope to obtain any real results.

"Germany's supremacy in research and scientific activities has been due almost solely to the fact that thousands of German scientists, with practically unlimited financial resources, are working constantly in laboratories in quest of solutions to problems involving chemistry. There is nothing comparable to this in America at present, but American industrialists seem to be taking more interest in such matters and there is hope for the future."

The principal problem, according to Dr. Norris, is to find a cheap raw material. There were several possibilities, he said, but petroleum seemed the best.

Firm Incorporates

The firm of Herron, Rodenbough and Meyer, New York City dealers in crude rubber, carbon black and allied products has been incorporated. The capital of the corporation is reported to consist of 1000 shares of preferred stock having $100 par value and 1500 shares common stock of no par value. The incorporators are J. S. Rodenbough, Edison Lenhart, H. H. McCorkle, J. W. Herron and E. T. Meyer.

Makes Morticians Sundries

Officials of the Royal Rubber Company of Barberton, Ohio, are reported to be considering confining their activities to the manufacture of a complete line of rubber supplies for the undertaking trade. This concern which was organized a little over two years ago, specializes in rubber aprons, etc., for department stores, and is said to be the only concern making a complete line of mortician's rubber sundries. Among these sundries are two styles of aprons, one for embalming and one for general utility wear, body protectors, pillow covers, floor mats, etc. Officers of the company are: J. H. Costello, president; Robert Guinther, secretary; and E. W. Leavitt, sales manager.

BATTERY BOX FREIGHT RATE CUT 20 PER CENT

Railroad freight rates on rubber battery boxes moving in carload lots in Eastern territory will soon be reduced 20 per cent under an order recently published by the Interstate Commerce Commission. An agreement that the reduction should be made was reached last October by the shippers and the railroad companies but an order of the Interstate Commerce Commission interpreting the long and short haul clause of the interstate commerce laws prevented the railroads from putting the lowered rate into effect. The Commission held another hearing on May 10 at which the railroads and the rubber companies were represented. The latest order of the Commission is a result of that hearing.

Golf Ball Imports High

Despite the increasing production in the United States, the imports of golf balls are continuing at an unusually high rate for the early months of the season, according to figures of the Department of Commerce. During April, 396,468 golf balls, valued at $159,687, were imported, 395,198 of which came from Great Britain. The average unit value of the balls imported was forty cents. The total number of golf balls imported in the first four months of 1926 was 930,122, an increase of 255,295 over the same period in 1925.

New Factory at Kenmore

The Stardent Novelty Company has purchased a seven acre tract of land at Kenmore, Ohio, for the site of a factory in which they will manufacture druggists' rubber sundries and household necessities. The first factory unit, on which work is scheduled to start immediately, will consist of a two-story building 65 by 100 feet and a power house. Two hundred men will be employed as soon as the buildings are ready.

New Oak Balloon

A special toy balloon for the Philadelphia Sesqui-Centennial is being produced by the Oak Rubber Company, balloon and rubber novelty manufacturers of Ravenna, Ohio. A Liberty Bell is imprinted on one side of the new model with an illustration of Independence Hall on the other. The company expects the demand for the balloon to be particularly active since many towns and cities in addition to Philadelphia are planning to celebrate the 150th Fourth of July.

TEXTILE ENGINEERS VISIT MANHATTAN RUBBER MILLS

The Manhattan Rubber Manufacturing Company at Passaic, New Jersey, acted as host recently to a delegation of approximately 100 members of the textile division of the American Society of Mechanical Engineers. The visit was one of a number which the engineers pay during the year at irregular intervals to various mills using materials in which they are interested. At the Manhattan mills the visitors paid particular attention to the manufacture of rubber belting and hose.

After the factory had been inspected and the various manufacturing processes observed, the delegation was entertained at the Passaic City Club and addressed by E. T. Miller, T. H. Carey and Harry Snyder of the Manhattan company.

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The London Letter

The GENTLEMAN FROM MINCING LANE will report current opinion in London's famous rubber market in every issue of THE RUBBER AGE

This week the Gentleman says "Logic is Dead".

LONDON, June 14, 1926.

SINCE MY last letter London stocks are up about 2,100 tons, and the price has receded to around 1/8 for spot.

All sorts of explanations are offered for the drop in price, including the stock excuse that America is holding off the market to depress prices which is becoming rather shopworn by this time. However, one needs not search further than the statistical position for the real cause.

The fact is that current supply exceeds current demand, and is likely to do so for the balance of 1926, and the great uncertainty introduced into the market by the continued operation of the Stevenson Scheme prevents consumers from absorbing the extra supplies as readily as they might otherwise.

Woe unto the man who tries to get a clear picture of the rubber industry from press comment in London. Too many of the speeches at annual meetings seem to be dominated by the individual hopes and aspirations of the chairmen.

Thus, we are reminded that the Bureau of Standards at Washington reported that reclaimed rubber could not be substituted for crude in tires without a corresponding decrease in mileage but commentators have quite overlooked the meeting of chemists in Akron where this statement of the Bureau of Standards was seriously challenged.

We are told that Malaya and Ceylon cannot produce more than 85% to 90% of Standard Production, and that the proposed cut of 20% under the Stevenson Scheme will in reality mean only 5% or 10%. But if it is suggested that the new Stevenson rules are somewhat drastic, it is pointed out that there has been an addition to Standard Production of from 12,000 to 20,000 tons through the lifting of the limits on output per acre!

IF ONE ventures the opinion that Restriction has been responsible for the large increase in output of native areas in the Dutch East Indies, he is reminded that all this rubber was planted before the Stevenson Scheme became effective, though neglected and abandoned for some time. If, on the contrary, one suggests that perhaps the Stevenson Scheme was unnecessary to save the industry, one is told that large areas of rubber would have had to be abandoned with serious consequence to the world.

Thus, Mr. Fairbairn, in his annual review of general market conditions at the meeting of Amalgamated Rubber says that "it is generally conceded that had Restriction not come into force, very many of the rubber producing companies would have been forced to abandon areas which even with an increase in price could not again have been brought by this time into production. It is therefore obvious that instead of stocks at the end of 1925 being reduced by 180,000 to roughly 150,000 tons, there would have been no stocks at all in the world, and Rubber instead of being 4/8d. a lb. in December would have been over 20/- a lb. I do not think that this is in any way an exaggeration....." Another of the prominent rubber men here paid his tribute to Restriction on the ground that it kept 250,000 tons of rubber off the market.

THE SAME situation exists when it comes to discussing price. If the American consumer suggests that he doesn't like high prices such as existed last year, the producer replies that he didn't receive the benefit, but that the cream went to the speculators. But if one wonders whether the Stevenson Scheme has on a whole been beneficial to producers, the high prices of last year are cited in proof that it has.

You will therefore, I hope, deal leniently with your London correspondent if his comment is reduced to "On the one hand....., but on the other hand....."

There is considerable underlying confidence in the rubber market. General opinion refuses to consider a decline in world consumption and even those whom we have been accustomed to regard as well-informed persist in putting world consumption this year at around 600,000 tons or only slightly less than world production.

This is the figure, for example, which Mr. Welch uses at the meeting of the Rubber Plantations Investment Trust. He views the position with equanimity, inasmuch as "the effect of the decision (of the Colonial Office) to reduce the exportable quota from 100 to 80 per cent if the price fails to average 1/9 in any quarter, should be to 'peg' the price above 1/9." Just why a 20% revision should "peg" the price, when changes of 5%, 10% and 15% failed to do so, is not explained.

The city editor of the *London Times* has become somewhat taciturn on rubber. After being a consistent and rather narrow-minded opponent of the Stevenson Scheme since it was first broached, he had the unhappy experience of seeing prominence given to a long, leading article in his own paper completely supporting Restriction which appeared at the time of the exchange of diplomatic notes between Great Britain and the United States on the question of rubber. Thus his style has been cramped. But he did venture some comment recently on the Gentlemen's Agreement among producers to hold up a certain amount of stocks on es-

tates with the object of stabilizing prices around 2s to 2/6. It looks at the moment as if estates may have to increase their storehouse capacity considerably if they are going to hold up rubber for 2/6.

The Times makes the ingenious suggestion that "Mr. Hoover's ebullitions may have contributed" to America's heavy buying in late 1925. It doesn't much matter what happens in America these days, the responsibility is laid on Mr. Hoover. And while we continue to have a normal supply of "hands-across-the-sea" speeches and addresses, the press continues to misquote the American minister of commerce. I have taken the trouble to read what Mr. Hoover actually said about rubber and other raw materials, and it appeared to me to be a conservative, inoffensive, sane, and logical picture of conditions he was obliged to bring to the American public's attention.

The Times further remarks that "the heavy planting of native rubber stimulated by the recent 'boom' is not a factor of immediate concern..... The scope for immediate expansion in native rubber production seems limited." This brings up the point that Restriction should prove of great benefit to American consumers in stimulating the native industry in the Dutch East Indies and in bringing about a permanent marketing organization through which Dutch rubber will reach consumers.

Thus, in addition to the work done in this direction by the large Chinese dealers in Singapore, we read of the recent formation of a strong Dutch corporation, backed by influential groups and in charge of able and experienced men, for the purpose of handling the output of native holdings. This corporation should eliminate the greater part of the speculative element formerly characteristic of this trade, and thereby insure a more or less steady flow of native supplies in place of the spasmodic marketing which would ordinarily accompany widely fluctuating prices.

As is well known, the South American leaf disease has been the cause of much trouble in the Guianas and Trinidad. It has been suggested that its prevalence was due more to local soil conditions than to any other factor, and that it really did not constitute a serious menace to rubber planted on proper soil but this point has not been established definitely. However, it may be of interest to those contemplating experimental plantations in Central and South America to know that spraying of trees has become a general estate practise in South India, where much trouble has been experienced in the past with a defoliating leaf disease. It is planned to introduce spraying into Ceylon as well. The results have been remarkable and the cost is low.

Some apprehension is being expressed in London over the widening activities of the New York Rubber Exchange. It is pointed out that unless a large stock of rubber, say 50,000 tons, is carried by New York dealers, it will be possible for anyone to corner the market. Strange to remark, fear is expressed of outsiders dabbling in rubber! Criticism is incidentally levelled at the conditions existing in London, where a lack of big dealers, rather than an acute shortage in spot rubber, is held in some quarters to be responsible for 4/8 rubber last year. One wonders what would have happened if London stocks had been held at 40,000 to 50,000 tons, instead of having been sold down to under 5,000.

Yours Faithfully,
THE GENTLEMAN FROM MINCING LANE.

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EDITORIAL COMMENT

Pulling Away From Danger

In spite of the fact that inventories of automobile tires and tubes are still high, tire manufacturers have reason to breathe a little easier. The period of price protection on tires shipped to dealers under the spring dating plan expires within the next few days, on June 30 to be exact. That means that if a reduction in tire prices should be made on or after July 1, it would not entail rebating the difference to dealers on unsold stock.

Hundreds of thousands of tires were shipped to dealers under the spring dating terms. The dealers have gradually disposed of most of them in spite of the sluggishness of sales all through the spring months. A price reduction in April would have meant a most serious loss for the manufacturers; a reduction in June would still mean a sizeable rebate.

It appears certain now that the month will end without a price cut. Early in the year one reduction was made and since that time the manufacturers have been under a great deal of pressure for further cuts. The public has been unable to understand why the heralded decrease in the spot price of crude rubber should not mean an immediate reduction in the price of tires.

The tire industry sought to explain that the rubber being consumed in the factories on a given day was purchased three to six months previously and at the prices then ruling and hence was unaffected by the current, and perchance lower, price of the day. The explanation did not get far in the clamor. The public was still dissatisfied. They refused to buy freely but it is obvious that they would still have retarded their purchases if anything but a most drastic reduction had been offered them. One cut would only have whetted their appetite. It was too well known that the price of crude rubber had declined from $1.10 to 44 cents.

The tire industry is to be congratulated upon its having refused to be stampeded into selling its goods for less than cost. An acquiesence to the popular demand today, or in early July, would still mean a loss but it is nothing as compared to the staggering loss which the manufacturers would have incurred in making a big reduction two months ago. One would like to give the industry as a whole a great deal of credit for having stood fast. The real reason for the unanimous fortitude, however, was that all the manufacturers were in the same boat from the standpoint of crude rubber commjttments.

To some extent at least the industry has now pulled away from a situation potentially as dangerous as that of 1921. If price reductions are made in July it is to be hoped that they will be based on a lower production cost and not on sentiment. The extent of any decline should reflect only the actual reduction made in the cost of the crude rubber used.

It is unlikely that the customers or the critics of the tire manufacturers will ever realize the enormity of the risk under which the industry works. In speaking recently of the hazards inherent in the business, one manufacturer said that being on the right side of the crude rubber market was more good fortune than cleverness. Such fluctuations in the price of crude rubber as marked the last year do not recur annually but they are not uncommon. During 1925 about 860,000,000 pounds of rubber were used in the United States. By far the greater part of it was bought many weeks in advance. It is easy to see in what danger even a thirty-cent drop in price puts those who have had to sign the contracts. A realization of that position makes understandable the worship of a stabilized price.

During the Congressional hearings last January several Congressmen took witnesses from the industry to task for their profit showing in 1925. They saw only one side of the picture. It is unlikely that in their private business any one of them ever took the degree of risk necessarily and regularly taken by the witnesses appearing before them.

Welcome Neglect

It is now certain that Congress will adjourn its present session without doing anything more about rubber. It is also certain that the rubber industry will appreciate the neglect. The action Congress did take in January ended inconclusively and futilely insofar as the supply of crude rubber is concerned, but its effect in another direction lives yet today as too many well-filled tire racks will testify.

If the Committee on Interstate and Foreign Commerce had reopened its deliberations on rubber, especially after the pivotal price of the Stevenson Restriction Scheme was revised upward, it is almost sure that it would have begun the study of retaliatory measures which were vaguely threatened in the Newton report. The adoption of such a remedy as retaliation would surely open up an economic warfare which would make a bad situation worse. It is a game at which more than one can play, and the players are drawn in quickly as they are indirectly affected. The chaos would likely be complete.

The Congressional hearings on rubber have been criticized for having heard one side only, the British not having been represented even by proxy. It has been a long time since any real attempt has been made to discuss the restriction question in a constructive way. It should be remembered that the Congressional hearings were broader than rubber alone and any international discussion of raw material controls could have an even wider agenda. The movement on foot to have such controls, including rubber restriction, discussed at the coming International Economic Conference, to be held at Geneva under the auspices of the League of Nations, can do no harm and might do much good.

It ought to be rather clearly established by this time that the British are not to be affected by the unfortunate bluster that was encouraged in certain quarters. In an economic warfare which would be precipitated by retaliation for their rubber restriction, Great Britain would have much to lose although she has several cards yet to play. Hence, the British government could be expected to join whole-heartedly in any calm discussion designed to alleviate the hardship that such controls can and do produce. If rubber prices run away again, the subject will surely have Congressional attention once more with the possibility of regrettable action.

Rubber Planting By "Colonos"

Advantages of System of Tropical Agriculture Used in Sugar Fields of Cuba May Lead to its Adoption for Rubber Growing in the Future

BY H. N. WHITFORD

THE NATIVE rubber planter continues to be the greatest factor of uncertainty in the crude rubber industry. In spite of numerous lengthy investigations, the opinions of well-informed men still vary greatly on the potential production of native acreages and the general future of native rubber culture.

Both sentimentally and commercially, the native with his untended acreage has been somewhat of a thorn in the side of the European planter with his expensive, orchard-like plantations. It has seemed so absurd in the first place that the native could succeed at all without heeding the rules that the European had developed. In the second place the ability of the native to increase his tonnage in spite of his crude methods has been the chief hindrance to the European planters getting a better return on the high capital investments they have made.

The European rubber growers, particularly those of the school which believes that the most intensive methods will more than pay for themselves, have predicted all sorts of calamities for the native plantations for most of which the world is still waiting. But even if many of these should befall the native the question remains as to whether his method has not its good points also. It is reasonable, in view of the native's success, to inquire if there is not an opportunity to use what the native has taught in developing a new system under which the two would support rather than antagonize each other.

The conflict between native and capital methods in tropical agriculture is not confined to rubber culture alone but extends to a wide range of both annual and perennial crops, such as sugar, bananas, cocoanuts, cacao, coffee and others that find their chief markets in temperate regions. The great bulk of the cacao and cocoanuts are produced today by simple methods of agriculture with little effort to improve the stock or to prolong the life of the trees through prevention of disease.

Some capitalistic ventures in sugar production, especially in Cuba, have in many instances adopted the simplest methods of cultivation which are almost identical with the native methods. The jungle is cleared, burned or partially burned and then planted without plowing. Practically all the work of clearing, planting, and harvesting the crop is done by contract with fixed charges. The complete capitalistic control is confined to such supervision of these operations as is necessary, but mainly to the transportation of the cane to the mill and its manufacture into crude sugar.

Under this system, the yield of sugar per acre is low but the production cost per pound is lower than might be the case were more scientific methods of cultivation adopted. It is generally held that as long as virgin land is plentiful and cheap, such methods will yield the largest return. With a scarcity of land, more scientific methods will have to be used, resulting in greater yields per acre. While some of the planters have certain

In the Middle East the removal of stumps and timber is frequently delayed until the rubber trees are three to five years old. Only a small percentage of the present planted area was fully clean-cleared before planting. The exact extent to which this practise increases the danger of root diseases is a matter of controversy.

areas under direct administrative control, most of them farm out by far the largest areas to natives of the countries in which they are operating.

These so-called "colonos" deliver their cane and receive in exchange a share of the sugar, or its equivalent in money according to the current market price. When the market price of sugar is high, the "colonos" make large profits; when the market price only approximates the production cost, they and the so-called "central" make no profit.

The "colonia" system is perhaps nowhere else so highly developed as in the sugar industry of Cuba, but with or without modification it is being applied to some extent to other tropical agricultural enterprises. The capitalistic development of rubber in the Middle East however has not resorted to this system. There the two methods, native and capitalistic, alone prevail. The European rubber grower has adopted the method of having all his plantings under direct administrative control.

In Central America Bananas are Planted Among Fallen Trees and Underbrush.

The proposed "colonia" system might still keep limited areas under complete administrative control but would share the control over much larger areas outside the "central". The marketing, however, would all be controlled by the "central". For the capitalist to adopt complete native methods is out of the question.

The European rubber estates in the Middle East working under complete administrative control give high returns when there is no overproduction of rubber for the margin between their production cost and the market price is then considerable. There has been no test of how they might have weathered a continued period of low prices because natural laws were supplanted by governmental regulations when such a period arrived.

So long as it can invoke such governmental aid, there is no question but that the European rubber industry of the Middle East under complete administrative control and with the continued advantage of abundant cheap labor will flourish and yield large profits on the capital invested. In this case the consumer will have to pay for the artificial government support.

Should the cost of labor to the European planter be increased materially or should the acreage of native plantings in non-restricted districts be extended more rapidly than European estates in the British colonies and elsewhere, the competition between the native and the European would become so severe that the survival of the Europan system would become more doubtful than at present.

The extreme advocates of intensive scientific methods of culture, especially the planting of new areas with approved budded stock, expect to increase the yield per acre to such an extent that the cost of production per pound can be reduced to so low a level that even the native cannot compete. Theoretically this is possible but it still remains to be demonstrated.

Insofar as the rubber plantation industry is concerned, the "colonia" system is admittedly untried. It is frankly a compromise between native and capitalistic development of plantations.

The heart of the "colonia" system is an administrative unit, the "central", under complete direct control. The methods used in the development of this unit can be more or less like those that the European plantations of to-day have practiced. Around the "central" provision is made for the establishment of a large number of small units by small native farmers who will have obtained some experience on the "central" plantation, or who, independent of this experience, can plant their farms under the direction of a trained personnel maintained by the "central" unit.

The scheme further provides for the "colonos" to market their rubber at the "central" either on a share basis depending on the market price or in the latex form at a fixed price per pound of dry rubber. The expense to the "central" will be the cost of the land, the cost of transportation facilities to the "colonos" and the necessary supervision charges.

The amount of control the "central" would have over the "colonos" remains to be worked out and would vary. In the interest of economy, this control should be reduced to a minimum. The "central" would furnish seeds or nursery plants and a limited amount of assistance in the planting of them. It would encourage the planting of catch crops of a sort suitable to the land chosen for planting. The hospital facilities of the "central" could be extended to sanitary control of the "colonos".

The individual farms could be large or small. If the farmers are recruited from among the laborers on the "central", the farms might be kept small enough to be almost family affairs. Larger areas might be allotted to more responsible parties who could furnish assurance that they could control enough laborers and capital to carry out the necessary operations properly. It is even conceivable that areas up to 500 or 1,000 acres or more might be taken up by reliable natives, Europeans or Americans under some form of contract that would be agreeable to both parties. The terms of this might include a loan from the "central" and rights for the ultimate purchase of the farm by the "colono".

The "colonia" system has been considered for rubber because in many regions it may have advantages over the system of complete administrative control now practiced in the Middle East. These can be enumerated as follows:

1. While the capital investment of the "central" will be high, that of the "colonias" will be low. If we assume that with some deviations from the usual methods now practiced an acre of ground on the "central" can be brought into bearing at $200 and an acre of "colonia" at a maximum expense of $50, the company would have control of the product of two acres at a capital cost of $125 per acre.

2. The system allows a readjustment in the labor and managerial expenses of production so as to give a larger share of this cost to labor and hence is adapted to the economic conditions found in regions where labor costs are higher than in the Middle East. Even in the East the competition between the native and the European

planter is likely to become so severe that with low-priced rubber the "colonia" system might prove more successful than the present system of complete control. Especially would this be the case should the cost of the European planter's labor be appreciably raised, and artificial restriction be abandoned.

3. The present method of administrative control as now constituted depends almost entirely on recruiting labor from distant points. The "colonia" system on the other hand would ultimately result in the settlement of sufficient labor that would be more permanently attached to the soil. In times of unfavorable prices the small "colonos" at least could suspend tapping and their owners maintain a living on the land reserved for food crops. Their rubber trees would not suffer but would be helped by the enforced rest from tapping.

4. The policy of some governments, like the Philippines for instance, is to encourage peasant plantings. This has not been successful because of the lack of initiative on the part of the peasant farmer. The "colonia" system might be a practical solution of this problem.

Another form of the "colonia" system is encouragement of small independent peasant farmers to plant on their own land with some form of contract to deliver rubber to the "central". This form allows little supervision of planting and production on the part of the "central", and could be used in those countries like the Philippines where there are restrictions on large acreage holdings, or in Haiti where practically all of the available land is already in the hands of small peasant farmers. Should this form of planting be adopted there are no reasons why it could not be applied also to countries where large acreages can be obtained.

Rubber Manufacturing Increasing in Japan

THE RUBBER industry in Japan has grown in a remarkable way during the last thirteen years. In 1913 there were only six rubber manufacturing plants in the country, but according to the Canadian trade commissioner who has recently made a survey of the industry, the number had increased to 180 by the end of 1925.

The trade commissioner states that during 1925 the total consumption of rubber goods in Japan was valued at about 35,000,000 yen and of this amount between 8,600,000 and 8,700,000 yen represent purchases of automobile tires, while 3,500,000 yen represent imports from the United States and France. The balance is made up of goods of Japanese manufacture consumed.

The principal manufacturing centers for rubber goods with values of output are as follows: Hyogo prefecture, 15,000,000 yen; Tokyo prefecture, 12,000,000 yen, and Osaka prefecture, 7,000,000 yen; but Hiroshima, Kanagawa, Okayma, and Kyoto prefectures manufacture to a certain extent.

According to a leading authority in the rubber industry, the demand in Japan for rubber goods is steadily increasing, but competition is keen and dealers are quoting very close prices as a result of which business is being conducted on a narrow margin of profit, but on account of the increasing demand there is a large turnover.

The firm of Dunlop Rubber Co. (Far East) Ltd., with a plant in Kobe, is the most prominent of the domestic

[*Continued on Page* 249]

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150 Nassau Street New York

Balloon Tires for Motorcoaches[1]

Low-Pressure Tires for Motorcoaches Now in Production as Both Operators and Passengers Demand Their Advantages

By J. M. Linforth[2]

LOW-PRESSURE, or balloon, tires are coming into use on motorcoaches and motor trucks at a much faster rate than is realized by most motorcoach engineers, in the belief of the highway transportation department of the Goodyear Tire & Rubber Co. If our experience with balloon tires on passenger cars signifies anything, we can foresee the riding public demanding low-pressure tires on motorcoaches. This belief is confirmed by the fact that each installation of balloon tires on a motorcoach has produced enthusiasm on the part of the operator because of the greatly improved cushioning provided, the greater minimum speed and the increased transportation-selling appeal of the vehicle. The passengers have commented favorably upon the greater riding-comfort and the decrease in noise.

Although we have been running small motorcoaches on balloon tires for several years, our first experience with dual balloon tires was in 1923. Since then we have put out approximately 300 balloon tires for motorcoaches and watched their performance closely. Some minor changes in the tires were made during this experimental period but even the first tires gave excellent service. Seven sizes, all but one of which are shown in section in Fig. 1, are now in regular factory production, in the dimensions and load capacities given in Table 1. Of these sizes, the 36 x 8.25-in. size probably will be most popular, as this size has been found most suitable for the average 29-passenger motorcoach. The 34 x 7.50-in. size will be used on vehicles of smaller capacity. The use of too small a size must be avoided if real balloon-tire effect is desired. In our experiments we used 34 x 7.50-in. tires on a 29-passenger motorcoach and found some improvement in riding-qualities over the high-pressure tires, but the improvement did not compare with that afforded by the 36 x 8.25-in. tires that were applied later. With the 36 x 8.25-in. tires the short sharp vibrations of the vehicle were noticeably absent and the large upward movements caused by passing over large obstructions were extended over a longer period.

TABLE 1—MOTORCOACH BALLOON-TIRE SIZES IN REGULAR PRODUCTION

Size, In.	Load Capacity, Lb.	Inflation-Pressure, Lb.
34 x 7.50	2,100	45
35 x 7.50	2,100	45
36 x 8.25	2,500	45
37 x 8.25	2,500	45
38 x 9.00	3,000	45
39 x 9.00	3,000	45

We believe that the proper application of balloon tires is on new motorcoaches as original equipment. In practically all dual rear-wheel use, the equipment with balloon tires requires a new design of wheel, and usually a new design of hub and brake drum. This makes it rather expensive for an operator to change over from high-pressure tires, although it has been done in several instances.

As for the mileage to be expected from the motorcoach balloon tire, our experience seems to indicate that at least as much mileage should be obtained as from high-pressure tires; tests have shown actually greater mileage.

One of the first questions asked in regard to the tires is whether or not the number of punctures will increase.

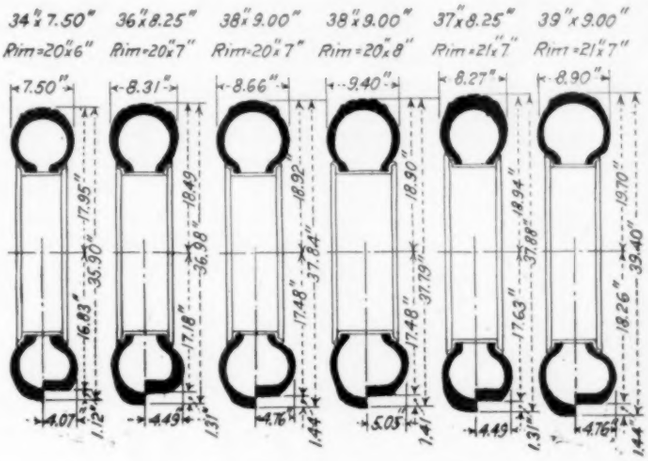

FIG. 1—VARIOUS SIZES OF BALLOON TIRES FOR MOTORCOACHES NOW REGULARLY PRODUCED
In Addition to the Tires Shown the Goodyear Line Has One More Size, 35 x 7.50 In. This Tire Has a Normal Over-All Diameter of 36.90 In. The Normal Sectional Diameter Is 7.50 In. and the Horizontal Dimension Becomes 8.14 In. when Deflected. The Inflation-Pressures and Load Capacities for the Complete Line Are Given in Table 1

I will answer this by relating facts from an installation on a 16-passenger motorcoach that had been averaging about one flat high-pressure tire per week. The balloon tires were applied about Oct. 1 and the two rear tires went through the entire winter without a "flat"; in fact, one went 27,965 miles and the other 29,485 miles without a puncture. Stated in another way, they ran more than 80 per cent of their full mileage without a puncture, as they averaged a total of more than 35,000 miles. Each of the two front tires went flat once during the winter. This is only one of many installations that showed similar results. I do not wish to convey the idea that motorcoach balloon tires will not puncture, but we are convinced from actual results that they should not puncture more easily or frequently than high-pressure tires.

One of the important advantages derived by the use of balloon tires is the decrease in running time of the vehicle due to an increase of the minimum speed without any increase of maximum speed. It is easy to account for this when it is observed how, with high-pressure tires, speed is reduced when going over rough stretches of road, whereas, with balloon tires, an even speed can be maintained.

We have found that the motorcoach balloon tires hold the road on wet as well as dry surfaces much better than high-pressure tires. Many operators have remarked

(1) S.A.E. Journal, Vol. XVIII, No. 5, 1926.
(2) Manager, highway transport department, Goodyear Tire & Rubber Co., Akron, Ohio.

that they are able to make stops with balloon tires that would be impossible with high-pressure tires. Thus the balloon tires add to the safety of motorcoach operation.

Indication of Public Acceptance

Probably the comments of the patrons of one of the motorcoaches fitted with the tires will give a better idea of the acceptance of balloon tires than could be presented in any other way. This coach operates over a route of 72 miles of concrete and macadam road which is in need of resurfacing in some sections. Corrugations make sustained speed with comfort out of the question on high-pressure tires. The vehicle is a Model-Y Yellow Coach of 29-passenger capacity. As each passenger entered, he was handed a printed card stating that the coach was fitted with balloon tires and asking him to write on the back of the card any comment he wished to make and return the card to the driver. Beginning with the first round-trip of the coach, comments began to pour into the office of the operating company. Thirty-three cards in the first batch commented most favorably and enthusiastically upon the superior riding-comfort. Some stated that the writers were able to read newspapers and to correct copy proof during the ride and others commented upon the driver's skill and observance of traffic rules. These comments indicate the public interest in motorcoach balloon tires. Such tires contribute definite improvement to highway transportation, and transportation always has been prone to adopt eagerly any development that will save time and add to the comfort of the traveler. Balloon tires accomplish both of these advances.

In adopting balloon tires for motorcoaches, considerable thought should be given to the question of the proper diameter for them. We all have heard considerable discussion in the last summer of the heat generated by brakes, especially on the 20-in. wheels for high-pressure tires on motorcoaches. The fact that wheels of 24-in. diameter are evidently free from this damaging heat seems to indicate that a diameter between 20 and 24 in. probably would avoid this trouble.

At a recent meeting of the Rubber Association of America, held in New York City, the following sizes for motorcoach and truck balloon tires, to be added to the ultimate standard tire sizes as presented to the car builders on Sept. 3, 1924, were suggested: 35 x 7.50/21, 37 x 8.25/21 and 39 x 9.00/21 in.

The tire committee decided at this meeting to recommend the addition of these sizes with the understanding that they might in a few instances, have to be made for 20-in. wheels, and a strong recommendation was adopted that every effort be made to limit production of these new balloon cross-sections to 20 and 21-in. inside diameter.

Increased Reader Interest

Scores of letters and telegrams already received indicate the great interest leaders in the industry are taking in the new RUBBER AGE.

Firms selling to rubber manufacturers can take advantage of this interest through the medium of the advertising pages!

PARA-FLUX *A Universal Softener*

(Reg. U. S. Patent Office)

for TIRES, MECHANICALS, RECLAIMS *and* FRICTION TAPE

The C. P. HALL COMPANY

118 Central Savings & Trust Bldg. AKRON, OHIO

NEW ENGLAND SOUTHERN MILLS

MANUFACTURERS OF TIRE FABRICS

This group of Mills is thoroughly equipped to produce coarse builders, breakers and chafers in all grades of cotton, in yarn numbers ranging from 4's to 30's in order to meet the demand for coarser yarns and lower cost fabrics.

LAWRENCE & CO., SELLING AGENTS

89 Franklin St., Boston 24 Thomas St., New York

The Rubber Boom in Palembang

Natives Move into Luxury Purchasing Class as High Rubber prices Bring Highest Per Capita Wealth Since War—Light Automobiles in Good Demand Along With Flashlights, Jewelry and Phonographs—Gold Coins Hoarded.

Specially Contributed to THE RUBBER AGE

Steamer Anchored in Moesi River Off Palembang City

IF ONE wishes to know how the price of crude rubber influences the lives of the natives of Palembang Province in southern Sumatra, he has only to visit the unlovely, tropical city of the same name for a few days and observe the toko and bazaar activities. Here the improvident native from the surrounding areas gratifies his desires in the purchase of fine clothing, jewelry, notions, trinkets, musical instruments and the wide variety of things poverty has always forced him to do without except for a brief period during the World War. Now there appears to be no lack of money. Only a native so lazy that he will not go out and tap rubber trees for a few hours a day need do without a new sarong and cannot afford to buy his womenfolk new kains, kabayas and trinkets and possibly a few American "Eagles".

The story is told of a native appearing at the tax office in Palembang to pay his income tax and being so pleased with himself that he had his picture taken in front of the office proudly displaying a thousand guilder note protruding from the left breast pocket of his jacket. Another story is told by an American oil driller who was requested by a native to change a two hundred guilder note to pay his taxi fare. The driller was naturally somewhat embarrassed as he was not in the habit of carrying that much loose change in his pockets.

Palembang lies just 3° south of the equator and is the capital and principal city of the province of the same name in the southern part of Sumatra, the second largest of the group to the southeast of Asia known as the Netherlands East Indies. Palembang, however, is only one of several districts now benefitting from the higher price of rubber. Djambi and Riouw to the north and the Lampongs to the south as well are enjoying similar conditions.

Location of City

Palembang lies 50 miles up the Moesi River which is navigable for ocean going vessels some distance beyond the city though there is no port of entry beyond and vessels seldom proceed further. Palembang is approached by steamer from Singapore on the north and Batavia on the south. The Royal Packet Navigation Company which has practically a monopoly of the inter-island shipping, maintains a weekly express service from Batavia, augmented by several smaller steamers per month. The express service can usually be depended upon to make the trip in 26 hours.

As we steamed up the Moesi on my trip to Palembang we passed three or four schooners under full sail but making laborious progress. So far as we could see through marine glasses they were all loaded with native blanket rubber. At one abrupt turn we came in view of a large native clearing, obviously being prepared for rubber. Perhaps if there were some way of ascertaining the real truth about native plantings as well as existing producing areas there would be less anxiety on the part of consumers in the United States, though it must be said that nothing but high prices brings large quantities of native rubber on the market.

Greeted By Tropical Rain

When we tied up to the wharf at Palembang, it was raining as it can only rain in the tropics so most of the passengers decided to spend the night on the ship. We were awakened at daybreak by the noise of the ship's auxiliaries as they were already unloading in spite of a heavy drizzle. The hotels in Palembang are few and poorly equipped but fortunately I managed to get a small room at the Hotel Joling for 15 guilders ($6.00) per day. Everything goes up in these boom parts and if one cannot afford to pay, he is supposed to stay at home.

Immediately after breakfast I strolled through the native bazaars and, although I had visited many in Java, I was astounded by the big stocks and wide variety of merchandise displayed to tempt the native to part with his guilders. The natives were crowded in nearly every shop, buying freely for themselves and families. After a while I ceased marvelling at natives changing 50 and 100 guilder notes, a thing I had never seen in retail shops in Java where 50 guilders usually means a month's wages and often two or three.

Of course, it is well known that the Government encouraged the natives years ago to plant rubber as a means of improving their economic condition, but not even the most optimistic could possibly have foreseen what was going to happen in 1925 and 1926. The natives' economic condition has increased beyond even the wildest flights of fancy and there is every indication that they will continue prosperous for at least another year or two.

Tappers here work on the split system, the tapper getting as his wage half the latex collected. This he in turn sells to another native or a Chinese who makes it into wet blankets which he ships to Singapore for re-milling into crepe and sheet as Akron knows it. There is no way of guessing even within 50% of what native

production will be in 1926. It certainly will not be less than 1925 unless rubber takes a serious drop. The export figures represent the local native production as local consumption is nil.

In point of value the export of petroleum products greatly exceeds rubber even at present and recent prices of the latter. However, petroleum production has little influence on the lives of the natives except as the industry provides employment for a fair number at the wells and refineries.

Importance of Rubber

Rubber is the second most important export from Palembang but exerts a greater influence on native economic conditions than any other because the production is 99 per cent native. I was told that last year around 18,400 metric tons net weight cleared from this port, 98 per cent going to Singapore for remilling. There is only one small mill here at present but it is not unlikely that several may be established as it is recognized as an economic waste to ship a product containing as much as 35 per cent dirt and moisture to a port about 300 miles away by steamer for milling into sheets as required by world markets. An American company already operating several mills in Singapore has had a representative here studying the prospects for a mill.

The rubber exported last year brought into the district something like 24,000,000 florins, some of which went into the pockets of the Chinese middlemen but most of which went direct to the native who in contrast with the Java native is a keen business man and offers the Chinese serious competition as a middleman in the export trade and retailer in the import trade.

The automobile has attracted the newly-rich native more than any other thing. On the day of arrival at Palembang the writer counted in the customs grounds 50 Fords, 20 Chevrolets and 10 Overlands, all from Canadian factories, which had only arrived from Singapore a few days before, and which were being removed to the dealers shops as fast as they could be loaded on trucks and trailers. Around 90 per cent of all passenger cars are being sold to natives and about half of them are used as taxis. American light cars dominate the market but the smaller Fiats are making a strong appeal to the natives who can afford to pay the higher price. Up country many passenger cars are used to transport rubber.

Unofficial estimates place the number of natives at present in Palembang province at 875,000, Europeans 2,000, Chinese 13,000 and Arabs 3,000, a total of 893,000 and an increase of around 140,000 in the last ten years. The province covers an area of 33,100 square miles giving a density of population of about 27.

Although no reliable statistics exist it is the concensus of opinion in Palembang that the per capita wealth is greater today than ever before in the history of the natives of this province. Ample evidence can be seen in the variety of merchandise now being freely purchased in the tokos (or retail shops) of Palembang city. Most of it would be considered distinctly "cheap" in an average American city yet it represents goods which heretofore could only be purchased by the few wealthier. The preferred articles include oil lamps and lanterns, electric flashlights, soaps, low priced toilet articles and preparations, perfumes, bicycles, sewing machines, musical instruments, especially cheap phonographs, toys, inexpensive watches, jewelry and ornaments, safety razors, tinned fruits, fish and biscuits, and especially automobiles, tires, accessories and supplies.

In the opinion of Europeans in the province, Palembang's present exceptional prosperity is built upon too insecure a foundation for it to last much longer than the period of high prices for rubber, coffee and rattan. Practically speaking other crops are being neglected because the agricultural production is almost entirely in native hands and he can hardly see anything but rubber. There are only a few estates here. Nothing like the big plantations which are the backbone of economic conditions in the Sumatra East Coast district exists in Palembang. The neglect of rice growing is causing the government much concern.

Probable Establishment of Large Estates

The colonial officials are making investigations which may lead to the establishment of large estates in Palembang province but it is generally thought this development will not occur within the next five years. In the meantime should the price of rubber and coffee seriously decline the native will simply refuse to be bothered with tapping trees or picking coffee and can sit back and take it easy until the market recovers, be that one, two or three years later.

It would be incorrect to leave the impression that the native is wasting all he receives. While he is spending present profits recklessly, he is really investing a fair amount in gold in the form of coins worn as buttons or charms and in jewelry and other things which will have some intrinsic value. He puts little faith in banking institutions but many of those who have any thought for the future invariably have a "cache" somewhere about their property with enough to carry them over a long lean period.

CHINESE TOKO AND DUTCH HANDELSBANK

NATIVE DWELLINGS

Worm Gear Speed Reducers

Selection of Correct Size Depends on Many Elements Which May Be Expressed as Formulae To Facilitate Computations

BY F. A. EMMONS

Sales Manager, Foote Brothers Gear & Machine Company

THE GEAR speed reducer has become a very important factor in the past few years as a means of stepping down speeds of high speed commercial motors and other prime movers where they are to function with machinery and equipment operating at lower speeds. This applies equally to the spur gear, worm gear and herringbone type speed reducers, all of which have certain uses for which they are best adapted. This article will be confined to a discussion of the worm gear speed reducer which is suitable for use in installations where the direction of the power drive must be changed at right angles.

There has been a good deal written on the subject of speed reducers in the past few years with regard to design features, principles of operation, and construction of different types, and the advantages offered as compared with other forms of speed reducing equipment such as pulleys and belts, chains and sprockets, rope drives and open gearing. However, the thing that interests the purchaser or prospective user of speed reducers more than anything else is to know something about how these reducers can be applied in meeting his own individual speed reduction or power transmission problems.

Importance to Engineers

Basic information giving formulae and a knowledge of the applications of speed reducers to practical problems is important to the executive or engineer, when he has in mind the use of speed reducers in new equipment, or for replacements. It is with this idea in mind that the present article has been prepared. This article follows closely the lines of a previous one, outlining the methods employed in the selection of spur gear speed reducers of proper capacity.

In dealing with worm gear speed reduction problems, practically the same information is necessary in making the calculations relative to loads, horsepower, and torque, as is required on the spur gear type.

It must be remembered that theoretically the same horsepower is delivered by the reducing unit as is delivered by the prime mover. The speed, however, decreases through the worm reducer, depending upon the reduction ratio used and the torque or twisting moment correspondingly increases.

It must also be borne in mind that worm drives are inherently less efficient than spur gear reducers and the power delivered to the driven unit will be considerably less than the power received because of frictional and other losses in the worm drive. Therefore this factor must be considered in making calculations.

To make a proper selection of the correct size of worm gear reducer to meet a given set of conditions, it is necessary to have a clear understanding of the relation of the various elements involved. There is given below a set of simple formulae which show the relation of horse power, load and torque, and how to calculate the capacity of worm gear reducers required to meet certain conditions:

P=Load in pounds on drum or pulley
P=Standing Load in Pounds on Worm Gear
$2\pi R$=Circumference of Worm Gear
N=Revolutions per minute (R.P.M.)
T=Torque or twisting moment in inch pounds
W=Work Done
H.P.=Horse Power (33,000 ft. lbs per min.)

Torque or twisting moment is that force which tends to produce rotation in a shaft or pulley and is equal to the product of the force entered times the length of the lever arm.

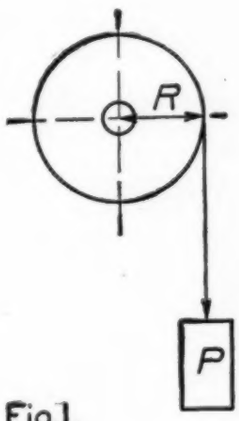

Fig.1.

Thus referring to Fig. 1.

$$T = P \times R \qquad (1)$$

Now work done is equal to the product of the force acting on the object, times the distance through which it moves.

$$W = P \times D \qquad (2)$$

When D=Distance Traveled
The distance through which the force acts in one revolution is equal to the circumference of the circle, which is $2\pi R$

$$W \text{ (Work Done)} = P \times 2\pi R \text{ Inch pounds.} \qquad (3)$$

Now as the drum or pulley makes more than one revolution the total work done will be

$$W = P \times 2\ R \times N \text{ inch pounds.} \qquad (4)$$

Since horse power is equivalent to 33,000 ft. lbs. per minute the horse power required to revolve the pulley N—times per minute against the weight P will be

$$HP = \frac{P \times 2\pi R \times N}{33{,}000 \times 12} \qquad (5)$$

Other useful formulae derived from Equations No. 1 and No. 5 are as follows:

$$HP = \frac{T \times N}{63{,}025} \qquad (6)$$

$$T = \frac{63{,}025 \times H.P.}{N} \qquad (7)$$

$$T = P \times R \qquad (1)$$

$$P = \frac{T}{R} \qquad (8)$$

$$R = \frac{T}{P} \qquad (9)$$

$$W = 2\pi T N \qquad (10)$$

In dealing with worm drives it is necessary to take into consideration standing and running loads on the

gear teeth. By standing load is meant the back pressure on the gear due to the load on the driven unit while at rest.

Thus in the diagram Fig. 2, by applying formula (1) it will be found that the torque necessary to move the load on driven shaft A, will require a gear with radius R, but the standing load on the gear will make necessary a gear of larger radius R, in some cases as in elevator hoist drives, etc.

To arrive at the proper radius for the worm gear in cases of this kind it will be necessary to calculate standing and running loads as follows:

$$P_1 = \frac{P \times R}{R_1} \quad (11)$$

but

$$T = P \times R \quad (1)$$

then

$$P_1 = \frac{T}{R_1} \quad (12)$$

$$R_1 = \frac{T}{P_1} \quad (13)$$

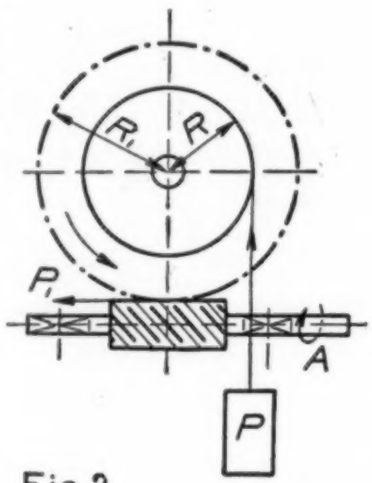

Fig.2.

R_1 will be the radius of the worm gear strong enough to withstand the standing load.

PRACTICAL APPLICATION OF FORMULAE

Problem 1—If we have a drum with a radius of 6" and a load of 1000 lbs., to be moved, find the torque necessary to move it.

Solution by Formula (1):

$T = P \times R = 6 \times 1000 = 6000$ inch pounds torque.

Problem 2—If the drum is to be driven at 1 R.P.M. how much work will be done during this revolution?

Solution:

$W = 2\pi TN = 6.28 \times 6000 \times 1 = 37{,}680$ inch pounds.

Problem 3—How much horsepower will be required to drive the above drum at 15 R.P.M.?

Solution by Formula (5):

$$HP = \frac{2\pi R \times P \times N}{33{,}000 \times 12} = \frac{6.28 \times 1000 \times 15}{33{,}000 \times 12} = 1.42 \text{ H.P.}$$

Problem 4—If we knew that the torque on the drum shaft was 6000 inch pounds and the speed 15 R.P.M. what horse power would be required to drive it?

Solution by Formula (6):

$$HP = \frac{TN}{63{,}025} = \frac{6000 \times 15}{63{,}025} = 142 \text{ H.P.}$$

Problem 5—If 1.42 H.P. is required to drive this drum at 15 R.P.M. what is the torque in inch pounds on the center of the drum shaft?

Solution by Formula (7):

$$T = \frac{63{,}025 \times HP}{N} = \frac{63{,}025 \times 1.42}{15} = 6000 \text{ inch pounds.}$$

Problem 6—If the torque or twisting moment at standing load on the drum is 6000 inch pounds and radius of drum is 6 inches, what is the load on the drum in pounds?

Solution by Formula (8):

$$P = \frac{T}{R} = \frac{6000}{6} = 1000 \text{ pounds.}$$

Problem 7—If the torque on this drum is 6000 inch pounds and the load on the drum is 1000 lbs. what is the radius of the drum?

Solution by Formula (9):

$$R = \frac{T}{P} = \frac{6000}{1000} = 6 \text{ inches radius or 12 inches dia.}$$

Problem 8—If the drum radius is 6 inches and the load is 1000 lbs. on the drum and the radius of the worm gear is 8 inches, what is the standing load on the worm gear?

Solution by Formula (11):

$$P_1 = \frac{P \times R}{R_1} = \frac{1000 \times 6}{8} = 750 \text{ lbs.}$$

Problem 9—If the torque on the drum shaft is 6000 lbs. and the standing load on the worm gear is 750 lbs. what must be the radius of the worm gear to withstand the load?

Solution by Formula (13):

$$R_1 = \frac{T}{P_1} = \frac{6000}{750} = 8 \text{ inches radius or 16 inches diameter.}$$

Solving a Practical Problem

We will now assume the conditions for a problem and carry the calculation through to the selection of the proper size and type of worm gear reducer to do the work.

Assume that we have an elevator whose efficiency is 95% (i.e. the friction loss in bearings, sheaves, etc. is 5%). The elevator drum or sheave shaft is 18" in diameter and is to be driven by a worm gear speed reducer at a speed of 15 R.P.M. The total load to be lifted is 3548 lbs. Speed of the driving motor is 800 R.P.M.

$$(5)\ HP = \frac{2\pi R \times P \times N}{33{,}000 \times 12} = \frac{6.28 \times 9 \times 3548 \times 15}{33{,}000 \times 12} = 7.6 \text{ H.P.}$$

as the efficiency of the elevator is 95% the actual H.P. required will be $7.6 \times 105 = 7.98$ H.P.

Assume an average efficiency of worm gear speed reducer as 70%, therefore, the size of motor required will be 8 H.P. $\times$ 130 = 10.4 H.P. The reduction ratio is 800 to 15 or 53.33 to 1.

Manufacturers generally list reducers according to capacities and reduction ratios and with the above information a selection of the proper machine can be easily made. It, also, is necessary to calculate the actual standing load for this particular problem and compare with safe standing load listed by the manufacturer, to make sure that the reducer selected will withstand the load.

By Formula (11):

$$P_1 = \frac{P \times R}{R_1} = \frac{3548 \times 9}{13.5} = 2365 \text{ lbs.}$$

The capacity of the driving unit must always be great enough to compensate for frictional and other losses in the reducing unit and driven unit and to start the load on the driven unit even though the power required while running is much less.

Efficiency of Worm Gear Speed Reducers

The efficiency of worm gear speed reducers varies considerably, depending upon the following factors, which are listed in the order of their importance.

(a)—Helix angle of the worm

(b)—Pitch line speed of the worm

(c)—Materials used in the worm and worm gear

(d)—Nature of lubricant used.

(a) The curves in chart (Fig. 3) clearly show the relation of helix angle to efficiency.

(b) The factor of pitch line speed of worm should be considered in selecting Worm Reducers, and motors to operate them. Pitch line speed of worm should preferably stay below 1000 feet per minute.

(c) Long experience and numerous tests by reducer manufacturers have proven that the combination of a steel worm and bronze worm gear give best results and highest efficiency for continuous service. For intermittent service, the steel worm and semi-steel worm gear have been found very satisfactory.

(d) The influence of the lubricant used on the efficiency is a minor factor, but highest efficiencies will be maintained by following the recommendations of the manufacturer for lubrication of the unit under consideration.

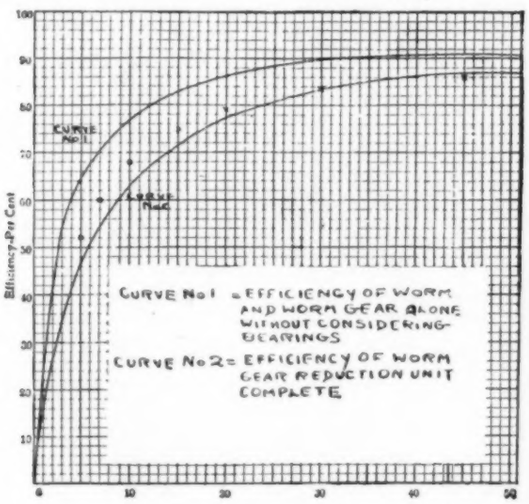
Efficiency-Per Cent
CURVE No 1 = EFFICIENCY OF WORM AND WORM GEAR ALONE WITHOUT CONSIDERING BEARINGS
CURVE No 2 = EFFICIENCY OF WORM GEAR REDUCTION UNIT COMPLETE

FIG. 3

To use the above efficiency curves it is first necessary to determine the lead of helix angle as the figures used across the bottom of curve represent degrees.

To obtain lead or helix angle use the following formula:

A=Helix Angle
L=Lead in Inches
P.D.=Pitch Diameter of Worm

$$\frac{L}{(P.D.)} = \text{Tan } A$$

The table below gives values for the tangent in steps varying from 5 to 45 degrees, which will assist in locating on the efficiency curve the result arrived at by solving the above formula for various leads and pitch diameters of the worm.

Tangent A	.087	.176	.267	.363	.466	.577	.700	.839	1
Degrees	5	10	15	20	25	30	35	40	45

In cases where worm reduction units are operated under heavy loads at comparatively slow speeds the efficiencies will be considerably lower than indicated by the curve. In such cases the efficiency may be increased somewhat by using a heavy grade of lubricant which prevents the oil film from squeezing out and breaking down.

Self Locking Feature

For certain classes of work such as hoists, inclined conveyors, or where load must be suspended after power has been shut off, it is desirable to have worm gear speed reducers, which are self-locking to prevent a reversal of the reducer.

Where such reducers are required a worm is necessary with a smaller lead, which may be calculated as follows:

PD=Pitch diameter of the Worm Gear in inches
C=Center distance between shafts of worm and Worm Gear
P_1D_1=Pitch diameter of worm
H=Cotangent of helix angle of worm
E=Lead in inches of worm thread

$$P_1D_1 = 2C - PD$$

$$H = \frac{\pi P_1 D_1}{E}$$

For single thread worm the lead E equals the distance between threads, multiple worms, multiply this distance by the number of separate threads.

If the angle whose cotangent is equal to H is less than 5 degrees the worm will be self-locking.

Japanese Rubber Industry

[*Continued from Page* 242]

manufacturers, making about half the automobile tires used in the country, as well as a wide range of other goods. One or two Japanese firms make automobile tires on a small scale. The fact that the Dunlop Company is a British firm explains why there are practically no imports of tires from Great Britain.

In imports from the United States averaging 3,200,000 yen annually, the Goodrich Company has the largest volume of business, followed by the Goodyear, Firestone and the United States Rubber Companies. There is a small importation of Michelin tires from France, but the volume does not exceed 200,000 yen per annum.

There is practically no importation of bicycle or jinrikisha tires into Japan, but the domestic consumption amounts to about 10,000,000 yen a year. Shoes are also manufactured to the value of 5,000,000 yen annually. Some rubber shoes are imported from Canada, but one American brand is probably best known on the market.

After tires and shoes, the following manufactures are next in importance: tabi and zori soles, balls, sheeting, belts, sanitary appliances and medical goods.

When You Need Books—

Consult the Book Department of THE RUBBER AGE. Whether it's a rubber book you are seeking—or a book on any other subject, we can get it for you. ***Turn to Page* 264.**

TECHNICAL ABSTRACTS

Mechanical Chemical Physical

Characteristics of Balata Belting

Balata belting is similar to rubber belting in that it consists of layers of fabric impregnated with a compound made from balata gum, which is distinct from rubber latex. The process of manufacture and the use of balata belting are about the same as those for rubber, according to *Belting, Transmission, Tools & Supplies.* It is made from a wide single strip of woven fabric, impregnated with the gum and folded over to make up the required number of plies. The gum cement the layers together so firmly that it is almost impossible to tear them apart.

Balata belting is listed according to the width and number of plies, the same as rubber belting. It is employed for general power purposes but, like rubber, has certain limitations as to temperature and presence of oil. It should not be used where the temperature is very high or where it is liable to become soaked with oil. The claim is made for balata belting that it has great strength and durability and perfect uniformity, that it is immune from the action of water, steam, dampness or normal changes of temperature and humidity, that it has strong gripping power, insuring high transmission efficiency, and that it does not stretch or shrink.

* * *

Thickening and Stabilizing Latex

British Patent No. 235,232

Thickened and stabilized rubber latex compositions for spreading, and dipping purposes are obtained by adding to latex a non-protein agent which is adapted to thicken the aqueous phase and stabilize the latex without substantially modifying the colloidal condition of the rubber hydrocarbon. A substance may be used for this purpose which reacts chemically with the water-soluble constituents of the latex. This refers particularly to the latex sugar. The same substance should not however attack the proteins that are present in normal rubber latex.

Such substances are lead thiosulphate, basic lead acetate, lead acetate with a protective agent, litharge, lead hydroxide, red lead, and reaction products that are obtained with lead oxides or salts with mono-, di-, and poly-saccharides, lead chloride, bismuth hydroxide, ferric oxide, ferrous lactate, basic ferric acetate, ferrous oxalate, stannous oxalate and cadmium sulphide. Thickening agents which act in a physical manner, for example ammonium or substituted ammonium soaps or saponification products, for example, those formed from acids of the stearic and oleic series or from coconut, cottonseed, palm, linseed and maize oils, or saponin, for example to the extent of one per cent of the rubber content, may also be used.

* * *

Rubber Resin in Vulcanization

It was found that in the case of rubber mixtures which contained an organic accelerator and oxide of zinc as well, the "resin" acids have the effect of stiffening the vulcanized product when small quantities of oxide of zinc are present. On the other hand these "resin" acids have exactly the opposite effect, that is they soften the rubber, when a large amount of oxide of zinc is present. In addition thereto, "resin" acids generally reduce the W slope of the stress-strain curve to a very considerable extent. It is suggested that "resin" acids deflocculate oxide of zinc, and that when small quantities of oxide of zinc are present this is of importance in developing the full stiffening effect of the accelerator. The reduced slope of the stress-strain curve is considered to be due to the improved wetting of the oxide of zinc particles by the rubber, thereby reducing the tendency of the rubber to flow under high loads.

* * *

Mastication of Rubber

***Kautschuk*, 1925, Nov. pages 6-8.**

The "two phase" theory of the structure of rubber suffices to explain the phenomena of the mastication process. In other words the "recovery" of rubber on storage after mastication is explained as being due to globules which during the milling operation have not lost the whole of their less viscous interior, once more becoming closed. In this way a part of the elastic character of the material is restored. It is also stated in this article that the aggregation theory of Le Blanc and Kroeger, which is particularly applicable to vulcanization, is not incompatible with the two phase theory.

* * *

Rubber Goods From Rubber Emulsions

British Patent No. 246,532.

In addition to the protecyion of the rubber deposit from contact with the anode gases by mechanical means, the production of homogeneous electrophoretic deposits of rubber can be ensured by prevention of the liberation of gases. The addition of sodium chloride and pyrogallol to the preserved latex, or the impregnation of a porous mold, surrounding the anode, with manganouse oxide prevents the liberation of gaseous oxygen. Alternatively a similar end may be achieved by using a zinc anode with latex containing sodium chloride. By using a carbon anode with latex to which sodium thiosulphate has been added, sulphur is deposited along with the rubber. The thickness of the rubber deposit is influenced by the material of the mold. The deposit forms more rapidly on gypsum than on unglazed earthenware. Fabric-lined rubber goods can be produced by slipping over an anode mold of the desired shape the necessary fabric lining and depositing the rubber on it.

* * *

Acceleration of Vulcanization

French Patent No. 29,785 (Addition to 523,417)

In this process acceleration of vulcanization of rubber is secured by mixing the rubber with two-tenths to one percent of furfuramide or other furfuraldehyde derivatives, which contain nitrogen. The vulcanization of the rubber mixture is carried out at a pressure of five to six atmospheres and lasts from nine to eighteen minutes.

INTERNATIONAL PULP CO., *41 Park Row, New York, N. Y.*
SOLE PRODUCERS OF PURE **ASBESTINE** SPECIALLY PREPARED FOR USE IN RUBBER
Covered and Protected by Letters Patent Registered at U. S. Patent Office, Washington, D. C.
LIBERAL WORKING SAMPLE FURNISHED FREE

Watching the News

THE CAMpaign waged by Germany for the return of her former African colonies has been intensified by a colonial convention at Bochum at which it was proposed that Germany refuse to enter the League of Nations until she has received explicit promises with reference to opportunities for colonial activities. Among other things this desire on the part of Germany undoubtedly reflects the wish to have once more a part in the world's rubber production.

Before the World War rubber plantations in the German Cameroons in Africa had a most promising start and many Germans acquired experience in rubber culture, both in Africa and in the Middle East. Two of them were in the United States recently seeking to connect with an American rubber growing project. They sought to make clear however that their connection could not be permanent, "since", they said, "when Germany's colonies are returned to her as they unquestionably will be a few years hence, we would want to be free to return at once to the scene of our former activities in Africa."

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NO ONE KNOWS exactly how much thought of rubber growing there may be back of Representative Bacon's bill for splitting off the southern Philippines governmentally from the rest of the Philippine Archipelago and setting them up as a separate Moro Province with a capital at Zamboanga. The formation of such a territory would certainly brighten the hopes of getting some rubber planted in the Philippines for it would contain the entire island of Mindanao as well as Basilan. The main object of the bill is, of course, to open up these important areas to agricultural progress which has been delayed under the Filipino rule. The Moros appear to be more eager for peace and development than for independence. The introduction of the bill so late in the congressional session makes it almost sure that no action will be taken on it at the present time. However, it may show the Filipino politicians that such action is not impossible in the future unless the present land laws are liberalized. Their Congress meets at Manila in July and will therefore have an opportunity to make the next move.

—o—

IN THE OPINION of *The Iron Age,* the steel trade is not so barometric today as it has been in other years when all trade eyes were turned on it, watching for signs that general business was going to get better or get worse. While enviable in a way, the paper points out, the unfortunate feature of the old order of things was that the steel industry had to take its jolts before anyone else suffered. If business was in a bad spell and was going to get good, the steel mills got filled with low-priced business before they had information through price indexes that better times were coming. Nowadays the buying, making and shipping of steel is said to be in closer step with production and with the actual manufacturing and building operations throughout the country. Thus the barometric value of the steel industry to other lines of trade has been lessened.

—o—

WHEN LOUIS BORNO, president of Haiti, landed in New York the other day, he was hooted by a crowd of former Haitiens who dislike the way he has cooperated with the American military forces now occupying Haiti. The chief executive of the black republic was not perturbed, however, for in Port au Prince, as in New York, he finds many arrayed against him for the same reason. The situation is different among Haiti's peasant farmers. Under the protection of the American troops they are enjoying the first real tranquility they have known in many generations. It gives them a chance to till their small farms in peace. Americans serving in the Haitien Department of Agriculture are working on plans for the peasants to take up rubber growing along with the cultivation of their food crops. The end of the American occupation, which is still several years away, may see an important acreage of Hevea rubber in the country instead of the 300 trees now existing there.

—o—

KENMORE, AN AKRON suburb, has tied with one other town for the honor of having the lowest death rate in the entire United States. The healthfulness of rubber dust seems established thereby. Maybe the odor has a purifying effect. It is notable that the other contestant numbers fertilizer and chemicals among its principal products.

—o—

THE *STRAITS ECHO* of Penang, which manages to find space for many paragraphs concerning life in the United States, recently offered its readers the following "Potted American History", as it labelled the item:

"America invented the Fourteen Points and did not sign the Treaty of Versailles.

"America invented the League of Nations and then kept out of it.

"America invented the cocktail and then introduced prohibition."

It is surprising that it was not added that "America popularized the automobile and failed to grow her own rubber for its tires."

EDITOR'S REVIEW DESK

Books **Trade Catalogs** **Articles**

Announcing a New Book Service

For the convenience of the many readers of THE RUBBER AGE who have from time to time asked where certain rubber books might be obtained, we inaugurate with this issue a BOOK DEPARTMENT in which are listed a large number of leading books on rubber planting, manufacturing, chemistry, etc. In each case the title, author's name, number of pages, abstract of contents and the price is included. Readers who desire to complete their library of rubber books may obtain any of the books listed as well as any other rubber books still in print by ordering through this department. **(See page 264 for complete list).**

PRACTICAL WAYS TO CUT PRODUCTION COSTS. 12 pp. 10¾" x 7¾". The Jeffrey Mfg. Co., Columbus, Ohio.

The object of this catalog is to demonstrate that handling materials is no job for a man, but a job for machinery. Mechanical handling is claimed to help not only the large plant, but the small one as well. It is said that the wages often paid to a gang of men for a year would be sufficient to buy handling machinery to do the work better, more economically and in less time.

Illustrations show Jeffrey equipment in use for handling bags, boxes, etc., barrels, miscellaneous materials, stone and gravel, coal and ashes. Photographs of five Jeffrey pulverizers, crushers and shredders are also contained in this catalog.

• • •

UNIFORM THROUGH EXPORT BILL OF LADING. By W. Rodney Long. Transportation Division. United States Department of Commerce. Issued by the Bureau of Foreign and Domestic Commerce.

Shippers in all branches of industry should be interested in this Bulletin, which explains most thoroughly the uniform through export bill of lading as prescribed by the Interstate Commerce Commission and which has now been in use three years. Although the greater portion of the bulletin is devoted to an exposition of shipping advantages under this form, the last five pages give a list of shipping documents required by law on shipments to foreign countries.

• • •

COOPERATIVE INDUSTRIAL RESEARCH: A Constructive Activity of Trade Associations. Issued by Department of Manufacture, Chamber of Commerce of the United States, Washington.

This report lists various studies conducted by trade groups along the lines of cooperative research. They are classified under three heads: Scientific, General and Economic. They cover a wide range and an attempt has been made to concentrate on those more generally applicable to industry. Rubber latex in the paint industry is given as one of the researches carried on through the Institute of Paint and Varnish Research.

• • •

RAW WATER DISTILLING PLANTS FOR PRODUCING DISTILLED BOILER FEED MAKE-UP WATER. Fifth Edition. By Joseph Price. The Griscom-Russell Co., New York City.

This catalogue is a revised edition of previous ones, issued to include the latest developments in evaporator plants for purification of boiler feed makeup. The first section, which is devoted to an exposition of the benefits to be secured by the use of pure boiler feed water, is followed by an explanation of the workings and functions of distilling plants. The balance of the booklet is taken up by descriptions of the company's various products in this field. Organizations using the apparatus form the final pages. The catalog is illustrated with reproductions of both photographs and diagrams.

METHODS OF COMPENSATION. No. 4. Methods of Compensating Office Employees. Policyholders' Service Bureau. Metropolitan Life Insurance Co., New York.

This booklet tells how to stimulate better work and to compensate efficient workers in the office by the use of a well-adapted bonus system. Citing the experiences of numerous organizations, the leaflet describes systems for work susceptible of exact measurement and for work which is not. The job analysis is also discussed as a basis for a well-adapted system.

Interested executives can obtain copies of this leaflet without obligation by writing direct to the Metropolitan in New York.

• • •

INDUSTRIAL PLANTS. Vol. 3. 87 pp. 8¾" x 7¼". Bound in Boards. Stamped in gold. Chas. T. Main, designing, consulting and supervising engineer, 200 Devonshire St., Boston, Mass.

The excellent reproductions of photographs in this booklet are those of some of the industrial plants which Mr. Main engineered, and illustrate the wide variety of his work. The scope of this work includes industrial plants of all kinds, including rubber factories, textile mills, steam and water power developments.

• • •

MONEL METAL. Catalog of advertisements published in *Chemical and Metallurgical Engineering* for August.

Twenty-one companies who use monel metal in the manufacture of their products, are represented in this catalogue. A page is devoted to a description of the industries in which this product has found a useful place and each company appearing is given a full page to illustrate and describe their product.

• • •

EXPENSES OF DOING BUSINESS. Report of Committee IV, National Distribution Conference, Washington. 116 pp. Issued under auspices of the Chamber of Commerce of the United States, Washington.

A result of this investigation was to show that a uniformity of standard has been established in many retail trades. The wholesale trades have adopted this to a certain extent, but the idea has not advanced as far as in the retail branch.

The entire subject is discussed in detail, no point that has a bearing on the problem being omitted. Sample balance sheets from a variety of businesses are submitted, as are also charts and graphs to illustrate various parts of the discussion.

• • •

COLLECTION OF BUSINESS FIGURES. Report of Committee I, National Distribution Conference, held under auspices of the Chamber of Commerce of the United States, Washington.

Results of an investigating committee appointed by Secretary of Commerce, Herbert Hoover, are given in this pamphlet. The report is divided into three sections: basis factors affecting the collection of statistics, a preliminary survey of present sources of distribution statistics and a presentation of certain procedures already in force for the collection of statistics. Tables showing various departments of the Government and industries of the United States reporting are included.

• • •

GYNERAL ELECTRIC STEAM TURBINES. 16 pp. 8" x 10½". General Electric Co., Schenectady, N. Y.

General Electric steam turbines, rated at 500, 600 and 750 kw., are described in this bulletin. The general advantages of steam turbines are discussed, and sections and steam path diagrams are shown.

• • •

NINTH ANNUAL REPORT OF THE U. S. TARIFF COMMISSION, 1925. Government Printing Office, Washington. 15c a copy.

Proceedings of the various divisions, litigations, surveys, reports and investigations make up the contents of this volume. Changes in personnel during the year are given and a summary of the commission's work since its organization in 1917 is briefly outlined in conclusion.

STATISTICAL SECTION

TIRES & TUBES
CRUDE RUBBER

AUTOMOBILES
GASOLINE

IT APPEARS from the statistics at the moment as if the current rubber restriction quarter were to be another one of those in which the average closing price in London falls just below the figure needed to allow the exportation of more rubber under the Stevenson Scheme. The situation in past quarters as well as in the present quarter is shown in one of the tables on this page. Like all other tables in this section, it has just been brought up-to-date. It reveals that in the first half of the current quarter, the London daily closing price has averaged only a little more than the 21 pence needed to keep Malaya and Ceylon from being cut back to 80% production. A slight recovery in the London price, if maintained consistently over the next six weeks, would be sufficient to bring about the average demanded. Other statistical tables in this section, particularly those relating to the consumption and stocks in the United States, gives some indication that such a recovery is not likely to take place naturally.

Average Spot Closing Prices--Ribbed Smoked Sheets

(New York Market)

Average Price per Pound for Years 1910-1920

Year	Cents	Year	Cents	Years	Cents
1910	206.60	1914	65.33	1918	60.15
1911	141.30	1915	65.85	1919	48.70
1912	121.60	1916	72.50	1920	36.30
1913	82.04	1917	72.23		

Average Monthly Price per Pound since 1921

Months	1921 Cents	1922 Cents	1923 Cents	1924 Cents	1925 Cents	1926 Cents
Jan.	19.18	18.82	32.73	25.86	36.71	79.50
Feb.	17.96	16.12	35.14	25.29	36.01	62.25
Mar.	17.05	14.53	34.21	22.83	41.00	59.00
Apr.	16.73	15.99	32.48	22.51	43.64	51.25
May	15.82	15.25	27.39	19.89	58.47	47.75
June	12.49	15.11	26.88	18.81	77.26	
July	14.01	14.67	26.10	22.16	103.16	
Aug.	14.04	13.93	28.84	26.17	82.99	
Sept.	14.53	14.44	28.95	27.56	88.88	
Oct.	16.02	19.78	26.93	31.13	98.01	
Nov.	18.06	23.88	27.14	34.33	104.80	
Dec.	20.47	27.42	26.60	37.88	98.51	
Average for Year	16.36	17.50	29.45	26.20	72.46	

London Closing Prices of Ribbed Smoked Sheet

(In pence per pound)

Fourth Restriction Year—Third Quarter

Day	May	June	July	Day	May	June	July
1	24	20½		16	——	20¾	
2	——	19¾		17	22½		
3	23½	20¼		18	21¾		
4	24⅜	20½		19	22½		
5	24¼	20½		20	22¼		
6	23¼	——		21	22		
7	23½	20		22	——		
8	——	20¼		23	——		
9	——	20½		24	——		
10	23½	20¼		25	21		
11	23¼	20½		26	20¾		
12	23¾	20¾		27	20¾		
13	23	——		28	20¾		
14	23¾	20½		29	——		
15	——	20½		30	——		
				31	20½		

(The average price for the period for which daily prices are reported above is approximately 21.70 pence. The British Colonial Secretary has announced that only 80% of the standard production will be exportable from the restricted area during the next quarter if the price during the entire current quarter does not average at least 21 pence.)

Average Price in Previous Quarters

Quarter	1922-23	1923-24	1924-25	1925-26
Nov-Jan	14.285	14.175	17.9983	46.709
Feb-Apr	16.858	12.917	19.356	28.103
May-July	14.242	10.974	38.469	
Aug-Oct	14.944	14.632	43.269	

U. S. Imports and Exports of Crude Rubber.

	Gross Imports			Re-exports			Net Imports
YEARS	Long Tons	Total Declared Value	Average Declared Value per pound Cents	Long Tons	Total Declared Value	Average Declared Value per pound Cents	Long Tons
1900	22,026	$28,577,789	57.92	1,718	$2,839,668	73.77	20,308
1901	24,617	28,120,218	51.00	1,663	2,425,727	65.11	22,954
1902	22,702	25,158,591	49.47	1,457	1,877,698	57.52	21,245
1903	24,886	35,152,642	63.06	1,646	2,598,416	70.47	23,240
1904	27,629	43,784,297	70.75	1,540	2,749,234	79.70	26,089
1905	28,637	48,517,906	75.63	1,616	3,149,989	87.00	27,021
1906	30,316	53,391,137	78.62	1,676	3,153,775	84.02	28,640
1907	30,649	49,813,361	72.56	1,832	3,509,902	85.55	28,817
1908	34,058	44,696,526	58.59	1,655	2,466,428	66.52	32,403
1909	41,950	79,264,817	84.35	2,161	4,233,921	87.46	39,789
1910	40,241	98,007,295	108.73	2,749	8,134,064	132.07	37,494
1911	36,987	74,410,550	89.81	2,523	4,977,174	88.07	34,464
1912	52,705	99,567,071	84.34	2,456	4,692,262	85.31	50,249
1913	51,732	76,820,739	66.29	1,881	3,396,429	80.62	49,851
1914	63,868	70,472,704	49.26	2,618	3,244,346	55.32	61,250
1915	98,876	111,031,144	50.13	2,082	2,357,350	50.54	96,794
1916	120,576	159,745,475	59.15	4,098	5,330,100	58.07	116,478
1917	181,089	233,220,904	57.49	4,000	5,305,289	59.21	117,089
1918	145,518	146,378,313	44.91	2,746	3,133,622	50.95	142,772
1919	239,259	215,820,113	40.27	2,282	2,205,629	43.15	236,977
1920	252,922	242,795,773	42.86	4,160	2,846,898	30.55	248,762
1921	185,394	73,772,677	17.76	5,716	2,414,924	18.86	179,678
1922	301,076	101,843,188	15.10	4,809	1,921,828	17.84	296,267
1923	309,144	185,060,304	26.72	8,772	5,672,319	28.87	300,372
1924	328,056	174,231,331	23.71	10,309	6,057,637	26.23	317,747
1925:							
Jan.	32,898	22,406,756	30.41	1,162	963,593	37.02	31,736
Feb.	24,696	18,532,115	33.50	979	779,406	35.53	23,717
Mar.	33,072	25,146,691	33.94	1,345	1,105,119	36.69	31,727
Apr.	32,506	24,874,562	34.16	1,130	1,009,305	39.86	31,376
May	36,932	30,311,754	36.64	1,203	1,323,445	49.12	35,729
June	31,569	26,855,883	37.98	1,198	1,577,106	58.75	30,371
July	32,455	33,701,723	46.36	1,278	2,132,681	74.52	31,177
Aug.	33,412	39,834,348	53.22	1,131	1,623,258	64.08	32,281
Sept.	26,367	36,686,013	62.11	1,154	1,820,360	70.41	25,213
Oct.	34,651	50,027,338	64.45	1,132	1,989,291	78.43	33,519
Nov.	37,755	56,271,963	66.54	1,605	2,898,930	80.65	36,150
Dec.	40,329	65,055,868	72.02	1,510	2,625,259	77.61	38,819
	396,642	429,705,014	48.36	14,827	19,847,753	59.76	381,815
1926:							
Jan.	42,404	72,528,151	76.36	2,084	3,747,505	80.28	40,320
Feb.	32,865	58,733,370	79.78	1,430	2,280,168	71.17	31,435
Mar.	42,152	70,589,581	74.76	1,836	2,735,234	66.51	40,316
Apr.	34,544	48,742,539	62.99	1,128	1,605,093	63.58	33,416
May							
June							
July							
Aug.							
Sept.							
Oct.							
Nov.							
Dec.							

United States Tire and Tube Statistics[1]

Production, Sales, and Inventories[2]

AUTOMOBILE CASINGS

	Production During Month					Sales During Month					Inventory at End of Month				
	1922	1923	1924	1925	1926	1922	1923	1924	1925	1926	1922	1923	1924	1925	1926
Jan.	2,740	4,170	4,294	4,740	4,721	2,194	4,114	3,785	4,013	2,974	5,566	6,261	6,411	7,949	9,947
Feb.	2,779	4,291	4,372	4,908	4,865	2,144	3,568	3,849	3,924	3,436	6,255	6,966	7,020	8,928	11,164
Mar.	3,528	5,154	4,570	5,276	5,456	2,847	4,570	3,988	4,657	4,561	6,911	7,561	7,684	9,510	12,004
Apr.	3,202	4,719	4,410	5,341	5,346	2,853	4,106	4,018	5,498	4,980	7,286	8,118	8,219	9,088	12,461
May	3,629	4,880	4,051	5,467		3,608	3,793	3,693	5,954		7,364	9,209	8,442	8,611	
June	3,785	3,943	3,506	5,418		4,281	3,448	3,671	6,737		6,723	9,387	8,207	7,243	
July	3,302	2,657	3,403	5,587		3,678	3,463	4,748	6,298		6,445	8,628	6,851	6,421	
Aug.	3,874	3,141	4,313	5,607		4,153	3,803	5,010	4,760		6,173	8,078	5,969	7,261	
Sept.	3,340	2,706	4,708	5,007		3,407	3,563	4,539	4,569		6,149	7,197	6,033	7,681	
Oct.	3,566	3,148	5,169	4,505		3,534	3,821	4,196	5,580		6,244	6,502	7,118	6,670	
Nov.	3,644	3,200	4,253	4,229		3,248	3,408	4,480	3,671		6,620	6,252	6,943	6,955	
Dec.	3,543	3,250	4,584	4,760		4,040	3,547	4,143	3,601		6,132	5,772	7,427	8,142	
	40,932	45,259	51,633	60,845		39,987	45,204	50,120	59,262						

AUTOMOBILE INNER TUBES

	Production During Month					Sales During Month					Inventory at End of Month				
	1922	1923	1924	1925	1926	1922	1923	1924	1925	1926	1922	1923	1924	1925	1926
Jan.	3,125	5,269	5,184	6,343	6,809	2,552	5,091	4,723	5,576	3,723	6,996	7,784	8,960	11,570	14,361
Feb.	3,462	5,386	5,424	6,339	6,825	2,310	4,085	4,530	4,971	3,736	8,189	9,029	9,786	13,023	17,090
Mar.	4,023	6,501	5,625	7,000	7,030	2,848	5,214	4,667	5,711	4,987	9,321	10,321	10,877	14,236	19,131
Apr.	3,534	5,679	5,380	6,851	6,554	3,162	4,825	4,782	6,704	5,051	9,640	11,192	11,503	13,618	20,674
May	3,961	5,757	4,992	6,846		3,995	4,651	4,865	8,040		9,586	12,390	11,682	12,501	
June	4,174	4,787	4,658	6,942		5,391	4,882	5,286	9,032		8,249	11,899	10,888	10,409	
July	4,091	3,500	5,143	7,544		4,905	5,374	7,190	9,140		7,568	9,862	8,845	8,635	
Aug.	5,078	4,771	6,688	7,618		5,733	5,800	7,493	6,923		6,943	9,267	7,678	9,271	
Sept.	4,669	4,339	7,342	7,254		4,797	4,966	6,908	6,665		6,886	8,610	8,052	9,950	
Oct.	5,050	5,140	7,861	6,612		4,618	4,848	5,700	7,845		7,317	9,198	9,803	8,726	
Nov.	5,135	4,602	6,136	6,266		4,165	4,604	6,332	5,406		8,280	8,925	10,224	9,491	
Dec.	4,548	4,385	6,273	6,999		5,197	4,732	5,540	4,991		7,643	8,425	11,052	11,313	
	50,850	60,116	70,706	82,614		49,673	59,072	68,016	81,004						

(1) *Statistics of The Rubber Association of America, raised to 100%.* (2) *All figures expressed in thousands.*

Stock of Crude Rubber in United States and London

(All Quantities in Long Tons)

UNITED STATES

At End of	ON HAND			AFLOAT			ON HAND AND AFLOAT		
	1924	1925	1926	1924	1925	1926	1924	1925	1926
Jan.	——	60,870	55,198	——	36,759	46,296	——	97,629	100,434
Feb.	——	54,109	58,035	——	41,475	46,935	——	95,584	104,970
Mar.	——	52,494	61,822	——	40,577	43,567	——	93,071	105,389
Apr.	——	50,143	55,261	——	53,465	41,905	——	103,608	97,166
May	——	52,064		——	46,846		——	98,910	
June	——	50,997		——	51,202		——	102,199	
July	——	46,245		——	46,003		——	92,248	
Aug.	——	42,354		——	41,254		——	83,608	
Sept.	——	36,367		——	55,151		——	91,518	
Oct.	55,378	34,085		46,359	51,098		101,737	85,183	
Nov.	59,017	34,845		35,685	42,692		94,702	86,577	
Dec.	56,080	51,215		46,216	48,208		102,296	99,423	

(Rubber Association of America figures raised to 100%.)

LONDON

(In Wharves and Warehouses—Figures Include Latex)

At End of:	1920	1921	1922	1923	1924	1925	1926
January	19,300	56,573	67,252	73,498	57,460	27,172	9,994
February	18,329	59,439	67,623	70,483	56,732	23,425	10,004
March	18,969	63,913	66,670	63,438	55,647	18,104	13,750
April	20,072	68,759	68,637	58,770	54,559	12,949	18,951
May	20,921	70,403	70,146	54,439	51,615	5,895	20,896
June	22,517	69,408	71,597	51,050	51,115	5,318	
July	25,346	71,065	71,515	49,937	52,073	4,258	
August	30,674	73,211	72,112	48,427	49,700	4,619	
September	35,504	72,175	70,977	54,523	44,011	5,453	
October	41,743	69,229	68,536	58,891	37,523	5,086	
November	45,550	70,786	68,548	60,074	33,593	3,869	
December	50,652	69,792	72,299	60,246	29,488	5,697	

United States Consumption of Gasoline

(Gallons)

MONTHS:	1918	1919	1920	1921	1922	1923	1924	1925	1926
January	144,579,291	169,240,627	236,073,140	294,750,791	282,717,148	456,967,163	500,420,689	595,413,000	720,358,000
February	147,204,377	185,900,192	248,395,214	225,195,372	262,925,732	380,093,070	402,703,876	543,640,000	650,718,000
March	219,333,317	201,004,317	256,020,539	346,164,546	380,406,778	446,460,208	467,181,088	625,053,000	779,571,000
April	265,151,411	243,440,615	297,000,463	333,290,921	385,230,994	485,716,788	607,175,026	798,305,000	831,410,000
May	313,824,603	327,610,273	378,912,692	354,263,486	499,724,405	582,535,781	672,495,321	841,787,000	
June	306,677,723	305,960,438	427,747,291	442,924,973	506,959,446	633,504,590	682,409,140	868,350,000	
July	353,589,555	396,242,260	434,878,617	457,758,078	566,099,329	674,019,467	789,666,590	963,071,000	
August	339,435,744	376,484,274	479,741,391	505,035,827	583,687,932	692,154,000	828,057,847	931,901,000	
September	284,685,213	367,633,742	450,888,670	438,083,634	507,924,207	655,797,616	718,068,623	848,867,000	
October	299,642,892	338,429,709	384,802,246	454,995,551	490,393,454	621,172,668	751,499,199	831,774,000	
November	245,278,844	284,620,809	366,567,344	350,548,481	471,616,103	538,308,809	698,359,199	757,744,000	
December	209,863,377	238,245,230	289,673,556	313,015,596	434,399,514	518,305,120	657,967,000	759,699,000	
TOTAL	3,129,266,347	3,434,812,486	4,250,696,163	4,516,027,256	5,372,085,042	6,685,035,280	7,770,238,000	9,365,604,000	

Exports of Crude Rubber from Principal Producing Countries

(Figures in Long Tons)

	British Malaya[1]						Dutch East Indies[5]				French[3]		
	Gross Exports	*Imports*	*Net Exports*	*Ceylon*[2]	*India & Burma*[3]	*Br. North Borneo*[4]	*Sarawak*[4]	*Siam*[4]	*Java & Madura*	*Sumatra E. Coast*	*Other D.E.I.*	*Indo-China*	*Amazon Valley*[6]	*Total*[7]
1923	252,016	70,432	181,584	37,112	6,416	5,433	1,744	1,718	32,938	44,002	57,822	5,606	19,859	394,263
1924	259,760	107,419	152,341	37,351	7,697	6,485	1,892	2,962	42,446	52,499	80,347	6,688	23,164	413,872
1925	316,825	158,022	158,803	45,684	10,082	8,460	2,308	5,378	46,643	62,678	119,271		25,307	
1925:														
Jan.	19,183	10,132	9,051	3,065	1,090	605	180	404	3,053	5,097	5,858	701	1,712	30,816
Feb.	21,622	10,071	11,551	2,207	1,121	469	148	283	3,490	5,139	8,569	586	2,977	36,540
Mar.	26,836	13,399	13,437	4,201	984	756	209	437	4,583	5,499	10,807	487	2,459	43,859
Apr.	22,414	11,751	10,663	3,250	684	483	164	384	4,121	4,663	8,536	482	1,585	35,015
May	26,667	12,979	13,688	2,600	585	717	189	489	3,624	4,455	12,006	599	2,588	41,540
June	27,894	14,706	13,188	3,502	831	1,046	195	430	4,187	4,667	10,644	833	1,653	41,176
July	24,809	16,192	8,617	4,487	680	955	218	533	4,719	5,244	10,516	411	1,142	37,522
Aug.	27,753	12,025	15,728	3,409	671	548	194	436	3,210	5,186	9,445	484	1,810	41,121
Sept.	29,425	12,913	16,512	4,758	745	766	218	533	3,364	4,913	10,628	764	2,140	45,341
Oct.	28,711	14,986	13,725	5,270	516	639	199	708	3,516	5,511	11,767	683	2,240	44,774
Nov.	31,648	14,904	16,744	3,980	1,044	838	186	411	4,657	6,349	11,958	991	2,620	49,778
Dec.	29,863	13,964	15,899	4,955	1,131	638	208	330	4,119	5,955	8,537	860	2,381	45,013
	316,825	158,022	158,803	45,684	10,082	8,460	2,308	5,378	46,643	62,678	119,271	7,881	25,307	492,495
1926:														
Jan.	30,452	10,237	20,433	4,058	1,273	416	196	288	4,398	4,965			1,284	
Feb.	30,440	8,306	22,134	4,941	725	488	141	253	4,445	4,475			2,759	
Mar.	35,012	14,800	20,212	5,70-					4,855				2,126	
Apr.	23,727	10,565	13,162	3,484										
May	31,231	10,604	20,627											
June														
July														
Aug.														
Sept.														
Oct.														
Nov.														
Dec.														

([1]) Malayan net exports cannot be taken as Malayan production since much of the imported rubber contains a high percentge of moisture and impurities which are eliminated before it is re-exported; the Malayan figures do not contain rubber exported as latex which on the basis of 3 pounds per gallon amounted to 99 tons in 1923, 957 tons in 1924 and 3,101 tons in 1925. ([2]) Ceylon Chamber of Commerce statistics until 1926. ([3]) Official statistics. ([4]) Figures for Sarawak, British North Borneo and Siam are imports from these territories into Singapore through which port practically their entire production moves. ([5]) Exports from "Other Dutch East Indies" are chiefly native rubber containing a high percentage of moisture and impurities for which no allowance has been made in the statistics; rubber shipped as latex has not been included and amounted to 6,355 tons in 1923, 2,735 tons in 1924 and 6,207 tons in 11 months of 1925. ([6]) Exports through Para, Manaos and Iquitos. ([7]) This total includes the net exports from British Malaya and all the figures shown for the other territories.

Net Imports of Crude Rubber into Principal Manufacturing Countries

(Long Tons)

	UNITED STATES	UNITED KINGDOM	FRANCE (abd)	GERMANY	CANADA (ac)	JAPAN (ac)	ITALY	RUSSIA (ce)	AUSTRALIA (cf)	BELGIUM (d)	NETHERLANDS	SWEDEN (abcd)	NORWAY (abc)	DENMARK (abd)
1919	236,977	42,671	19,951	5,584	8,770	10,688	9,894	75	733	3,995	2,771	2,022	437	673
1920	248,762	56,844	15,868	11,890	11,912	6,015	6,123	62	1,040	3,840	5,510	1,567	241	479
1921	179,678	42,087	16,981	21,920	8,248	22,981	3,906	165	554	1,705	1,022	813	178	251
1922	296,267	11,724	27,644	27,546	9,366	16,449	6,430	2,453	2,649	172	–3,807	1,248	321	87
1923	300,372	12,700	31,067	18,519	13,299	17,181	8,489	4,506	1,631	2,184	792	1,391	448	354
1924	317,747	–11,550	34,488	22,727	14,420	19,612	8,764	824	3,127	2,688	–807	1,781	669	473
1925	381,815	4,061	36,911	33,937	19,825	12,743	11,412	7,088	4,217	2,930	875	1,690	701	440
1925:														
January	31,736	–284	2,147	4,303	1,432	797	552	333	192	331	109	164	64	16
February	23,717	–2,492	3,529	3,690	1,278	658	908	1,000	338	275	88	136	145	37
March	31,727	–3,396	3,924	2,784	2,349	689	1,463	1,083	357	373	56	183	77	71
April	31,376	–2,961	3,069	3,574	1,397	719	817	535	314	97	181	149	47	22
May	35,729	–8,650	3,223	3,834	1,532	863	1,060	1,999	385	228	47	126	47	16
June	30,371	619	2,387	3,239	1,681	2,095	1,506	59	378	329	120	97	43	74
July	31,177	2,204	1,827	2,606	1,613	813	650	16	341	176	28	114	45	24
August	32,281	3,825	1,109	2,942	1,582	786	631	85	297	169	76	119	53	35
September	25,213	5,369	4,633	2,667	1,202	936	939	234	429	283	136	102	54	20
October	33,519	1,203	3,039	2,325	1,799	1,060	914	21	243	255	60	159	38	38
November	36,150	2,466	4,654	1,260	1,712	2,140	1,157	190	512	236	–12	219	55	52
December	38,819	6,158	3,370	713	2,248	1,187	815	1,533	431	178	–14	122	33	35
1926:														
January	40,320	6,439	3,170	703	2,188		760	332	358	76	154	123	46	51
February	31,435	3,114	3,513	1,113	1,685		1,041	643	432		89	171	82	94
March	40,316	8,907	4,790	1,342	2,079			832			227	213	31	55
Apr.	33,416	8,275						402			93	204		
May														
June														
July														
Aug.														
Sept.														
Oct.														
Nov.														
Dec.														

a—Including gutta percha. b—Including balata. c—Reexports not deducted. d—Believed to include scrap and reclaimed rubber. e—Russian statistics are exports from United Kingdom only to Russia. f—Australian annual statistics including 1924 are exports to Australia from Malaya, Ceylon, Dutch East Indies and United Kingdom; monthly figures and total for 1925 are exports from Malaya, Ceylon, and Java only. –Minus sign, reexports in excess of imports. *All statistics from original official trade returns.*

Daily Spot Closing Prices of Ribbed Smoked Sheet Rubber—*New York Market, in Cents per Pound*

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Average
1924																																
Jan.		26¼	26⅝	26⅝	26⅝		26⅝	26½	26⅝	26¾	26¾	26⅝		25⅝	26¼	26	26⅝	25⅝	25⅝	25⅝	25⅝	25¼	25⅛	24⅛	25⅛	25⅛			25⅛		25⅛	25⅛
Feb.	25⅝	25⅝		25⅝	25⅝	25¼	25⅝	25⅝	25⅝		25⅝	25⅝		25⅝	25⅝	25¼	25⅝	25⅝	25⅝	25⅝	25½	25⅝	25⅝	25⅛	25⅛	25⅛	25⅛	25⅛	25⅛		25⅛	25⅛
Mar.	25⅝			24	24¼	24½	24¼	24½	24¼	23¾	23¾	23¾		23¾	23¾	23¾	23¾	23¾	23¾	23¾	23¾	23¾	23⅝	23⅛	23⅛	23⅛	23⅛	23⅛	23⅛	23⅛	22	22	22⅛
Apr.	22½	22⅝	22⅝	22⅝	21⅞	21⅞	22⅝	22⅝	21⅞	21⅝	22¼	22¼	22¼	22¼	22¼	22¼	22¼	22¼	22¼	22¼	22⅛	22⅛	22⅛	22⅛	22⅛	22⅛	22⅛	22⅛	22⅛	22⅛	22⅛	22⅛
May	22⅝		22⅝	22⅝	21⅝	21⅝	21⅝	21⅝	21⅝	21⅝			21⅝	21⅝	21⅝	21⅝	21⅝	21⅝	21⅝	21⅝	21⅝	21⅝	21⅝	21⅝	21⅝	21⅝	21⅝	21⅝	21⅝	21⅝	21⅝	21⅝
June	21⅝	22⅝	22⅝	22⅝	21⅝	21⅝	21⅝	21⅝	21⅝	21⅝	21⅝	21⅝	21⅝	21⅝	21⅝	21⅝	21⅝	21⅝	21⅝	21⅝	21⅝	21⅝	21⅝	21⅝	21⅝	21⅝	21⅝	21⅝	21⅝	21⅝	21⅝	21⅝
July	18⅝	19⅝	19⅝	19⅝	19⅝	19⅝	19⅝	19⅝	19⅝	19⅝	19⅝	19⅝	19⅝	19⅝	19⅝	19⅝	19⅝	19⅝	19⅝	19⅝	19⅝	19⅝	19⅝	19⅝	19⅝	19⅝	19⅝	19⅝	19⅝	19⅝	19⅝	19⅝
Aug.	19⅝	19⅝	19⅝	19⅝	19⅝	19⅝	19⅝	19⅝	19⅝	19⅝	19⅝	19⅝	19⅝	19⅝	19⅝	19⅝	19⅝	19⅝	19⅝	19⅝	19⅝	19⅝	19⅝	19⅝	19⅝	19⅝	19⅝	19⅝	19⅝	19⅝	19⅝	19⅝
Sept.	23⅝	23⅝	24	25	25	25½	25⅝	25⅝	25⅝	25⅝	25⅝	25⅝	25⅝	25⅝	25⅝	25⅝	25⅝	25⅝	25⅝	25⅝	25⅝	25⅝	25⅝	25⅝	25⅝	25⅝	25⅝	25⅝	25⅝	25⅝	25⅝	25⅝
Oct.	26⅞	26½	26½	26⅝	26⅝	26⅝	26⅝	26⅝	26⅝	26⅝	26⅝	26⅝	26⅝	26⅝	26⅝	26⅝	26⅝	26⅝	26⅝	26⅝	26⅝	26⅝	26⅝	26⅝	26⅝	26⅝	26⅝	26⅝	26⅝	26⅝	26⅝	26⅝
Nov.	29⅞	29⅞	29⅞	29⅞	29⅞	29⅞	29⅞	29⅞	29⅞	29⅞	29⅞	29⅞	29⅞	29⅞	29⅞	29⅞	29⅞	29⅞	29⅞	29⅞	29⅞	29⅞	29⅞	29⅞	29⅞	29⅞	29⅞	29⅞	29⅞	29⅞	29⅞	29⅞
Dec.	34⅝	34⅝	34⅝	34⅝	34⅝	34⅝	34⅝	34⅝	34⅝	34⅝	34⅝	34⅝	34⅝	34⅝	34⅝	34⅝	34⅝	34⅝	34⅝	34⅝	34⅝	34⅝	34⅝	34⅝	34⅝	34⅝	34⅝	34⅝	34⅝	34⅝	34⅝	34⅝
1925																																
Jan.		39⅞	39⅞		39	39	39¼	38¾	38⅝	38⅝		37⅞	36½	36⅝	35⅝	35⅝	35⅝	34⅞	34⅞	34⅞	35⅞	36¼	36¼	36¼	35⅞	35⅞	35⅞	35⅞	35⅞	35⅞	35⅞	36⅜
Feb.		35⅜	34⅜	34½	34½	34½	35⅜	35⅜	35⅜	35⅜	35¼	35¼	35⅜	36⅜	36⅜	36⅜	36⅜	36⅜	36⅜	36⅜	36⅜	36⅜	37⅜	37⅜	37⅜	37⅜	37⅜	37⅜	37⅜	37⅜	36	36
Mar.		38⅜	38⅜	38½	38½	39¼	39¾	39¾	39⅝	40⅜	40¼	40⅜	40⅜	40⅜	40⅜	40½	40½	41	41	41⅜	41⅜	41⅜	42⅜	42⅜	42⅜	43⅜	43⅜	43⅜	43⅜	44¼	42¾	41
Apr.	41¼	41⅜	41¼	41⅜	42⅜	42⅜	42⅜	43⅜	43⅜			44	44	44	44	44	44	44	44	44	44	44	44	44	44	44	44	44	44			43¾
May	45	45	47		47¼	46⅞	48⅜	48⅜	52½	50		59	57	59½	60¾	64½	71	72⅝	73⅜	75½	76¼	77¼	77¼	77¼	77¼	77¼	77¼	77¼	77¼	77¼	77¼	77¼
June	69½	72	74⅜	76½	75⅜	75⅜	74⅞	74⅞	73⅞	74	75¼	76⅞	74⅞	74⅞	71⅜	71⅜	72⅜	116¾	117	121	117½	119	117⅞	112¼	112¼	112¼	107⅞	107⅞	107⅞	103⅛	103⅛	103⅛
July	81½	81⅜	85⅜	95½	88¾	85⅜	86¾	81¾	95⅜	99¾	106⅞	99¾	110	105⅜	110⅞	117	116¾	80¾	80½	83⅜	82½	82½	85⅝	85⅝	85¼	87¼	87¼	91¼	91¼	90	90	88⅞
Aug.	94½		95½	88¾	85⅜	86¾	81¾	79	80⅞	83	72⅞	76½	81¼	80¾	77¾	78¼	78¼	92¾	93¾	92	92	93¾	93⅜	93⅜	89¾	91¼	91¼	99¼	100¼	100¼	98	98
Sept.	88⅜	87¼	85	88¾	85⅜	86¾	81¾	78¼	80⅞	83	86½	92	92¾	93¾	93¾	93¾	93¾	94¼	94¼	92¾	99	99¼	99¼	99¼	99¼	99¼	99¼	101½	107	104¾	104¾	104¾
Oct.	91¼	91½	92		94¼	97	97½	99	99¼	101		97¾	97¾	95½	97	99	99	99	102	101¼	102	99	99¼	99¼	99¼	99¼	110½	110½	110½	110½	110½	110½
Nov.		99¾		98¾	98¼	100	100½	108	109¼	106	105½	105½		101	99¼	90¼	93	107	109¾	110¾	110½	109	109	109	109	109	109	109	109	109	109	109
Dec.	106¾	108½	107¾	107¾	108¼		108	109	109¼	106	105½	105½		99¼	90¼	93	107	109¾	110¾	110½	109	109	109	109	109	109	109	109	109	109	109	109
1926																																
Jan.																																
Feb.	67	67½	66¼	66¾	68	69	69	69	55½	61	60	63	61½	62	62	62	62	62	62	62	62	62	62	62	62	62	62	62	62	62	62	62
Mar.	55	53	53	53½	57½	57½	56½	56½	53	53	53	51½	50¾	48¾	47¾	47¾	47¾	47¾	47¾	47¾	47¾	47¾	47¾	47¾	47¾	47¾	47¾	47¾	47¾	47¾	47¾	47¾
Apr.	59		59		59	58	49¼	49½	49	49	49½	49	48¾	47¾	47½	47½	47½	47½	47½	47½	47½	47½	47½	47½	47½	47½	47½	47½	47½	47½	47½	47½
May	48½		50	50¼	49½	49¼	49½		41¾	42	42	42	42	42	42	42	42	42	42	42	42	42	42	42	42	42	42	42	42	42	42	42
June	41½	42	41½	42	41½	41½	—																									
July																																
Aug.																																
Sept.																																
Oct.																																
Nov.																																
Dec.																																

Automobile Production

	Passenger Cars			Trucks		
	Total	United States	Canada	Total	United States	Canada
1920	1,883,158	1,799,522	83,636	322,039	311,531	10,508
1921	1,514,000	1,452,902	61,098	147,550	142,402	5,148
1922	2,397,827	2,302,923	94,904	251,434	244,285	7,149
1923	3,719,164	3,589,936	129,228	378,288	361,078	17,210
1924						
January	293,824	283,983	9,841	30,785	29,038	1,747
February	343,460	331,388	12,072	32,974	31,295	1,679
March	357,045	341,851	15,194	36,505	34,466	2,040
April	346,405	331,957	14,448	38,037	36,104	1,933
May	286,324	271,033	15,291	35,408	33,655	1,753
June	225,079	214,322	10,757	29,135	28,185	950
July	244,544	235,925	8,619	26,448	25,341	1,107
August	255,232	249,796	5,436	28,714	27,834	880
September	263,528	256,940	6,588	32,015	30,663	1,351
October	260,881	254,524	6,357	32,533	31,263	1,270
November	204,343	198,381	5,962	27,956	26,875	1,081
December	182,099	174,899	7,200	27,596	25,906	1,690
Total	3,262,764	3,144,999	117,765	378,106	360,625	17,481
1925						
January	212,921	204,620	8,301	28,198	26,633	1,565
February	252,803	242,024	10,779	34,467	32,774	1,693
March	332,154	319,140	13,014	45,168	43,079	2,089
April	391,302	375,787	15,515	47,898	46,322	1,576
May	382,714	364,363	18,351	43,380	41,492	1,888
June	364,806	350,557	14,249	38,141	36,347	1,794
July	358,554	347,414	11,140	41,915	40,070	1,845
August	221,831	214,401	7,430	37,843	36,357	1,486
September	272,425	262,053	10,372	60,452	57,972	2,480
October	406,572	392,651	13,921	46,003	44,309	1,694
November	336,358	327,617	8,741	40,077	37,840	2,237
December	285,199	277,701	7,498	34,477	32,746	1,731
Total	3,817,639	3,678,328	139,311	498,019	475,941	22,078
1926						
January	283,263	272,011	11,252	32,637	29,659	2,978
February	334,529	318,634	15,895	40,816	37,533	3,283
March	398,042	379,769	18,273	51,635	47,788	3,847
April	402,574	382,631	19,943	53,268	50,272	2,996
May	394,781	371,595	23,186	51,374	48,082	3,292
June						
July						
August						
September						
October						
November						
December						

U. S. Consumption of Crude Rubber

(Rubber Association of America statistics raised to 100 per cent—All figures in long tons)

	1921	1922	1923	1924	1925	1926
January	5,045	16,938	30,106	29,058	29,638	32,196
February	5,955	14,767	30,149	25,736	29,761	31,136
March	9,190	21,408	36,629	28,385	33,498	32,936
April	13,084	19,294	29,085	27,129	34,139	32,696
May	16,023	23,246	36,155	25,845	35,322	29,364
June	16,142	31,713	24,272	22,753	35,822	
July	18,310	24,522	17,685	23,396	36,053	
August	23,649	29,361	20,359	28,962	35,909	
September	16,705	24,410	17,594	31,497	31,691	
October	16,814	26,881	21,321	31,520	29,047	
November	14,105	24,950	20,437	27,289	28,853	
December	15,482	25,070	21,902	27,199	28,748	
TOTALS	170,504	282,560	305,694	328,769	388,481	

Monthly statistics covering shipments of various classes of rubber goods from the United States may be secured free of charge from the Rubber Division, Bureau of Foreign & Domestic Commerce, Washington, D.C.

The Market Place

WHERE TO OBTAIN
Machinery, fabrics, chemicals, compounding ingredients, crude and reclaimed rubber, consulting chemical
1.

ACCELERATORS—X L O and Diphenyl Guanidine.
Dovan Chemical Corp.
30 Church St. New York

ACCELERATORS — Two new accelerators: Vulcone and Di-ortho-tolylguanidine.
E. I. du Pont de Nemours & Co., Inc.
Dyestuffs Dept. Sales Div.
Wilmington, Del.

ACCELERATORS
Grasselerator 102
Grasselerator 552
Grasselerator 808
Grasselli Chemical Co.
Rubber Service Dept.
347 Madison Ave., New York

ACCELERATORS— Every lot is tested before shipment and a written guarantee of quality furnished.
Roessler & Hasslacher Chem. Co.
709 Sixth Ave. N. Y. City

ACCELERATORS—A19, A7, Thiocarbanilid.
The RUBBER SERVICE Laboratories Co.
611 Peoples Savings & Trust Bldg.
Akron Ohio

ANTIMONY Pentasulphide, golden and crimson, very fine, pure.
Rare Metal Products Co.
Belleville, N. J.
Direct Factory Representation

The* BLUE LIST *of the Industry

Your Products Listed Here

reach buyers in rubber factories at a cost lower than is possible by any other method.

ARRANGE FOR YOUR LISTING TODAY!

ASBESTINE—Specially prepared for use in Rubber. Send for liberal working sample.
SOLE PRODUCERS
International Pulp Co.
41 Park Row, New York City

BEAD CABLES— National Flat Woven and Pratt Patent Bead Cables.
National Standard Co.
Niles, Mich.

BOLTON BIAS CUTTER
Cuts cord or flat woven fabrics with equal ease and precision. In use all over the world.
Spadone Machine Co., Inc.
15 Park Row New York

CALENDERS—Embossing, for artificial leather, oil cloth etc.
Textile-Finishing Machinery Co.
83 Exchange Place, Providence, R. I.

CARBON BLACK—*Micronex* the world's standard gas black, universally known as the "King of Rubber Pigments."
Binney & Smith Co.
41 East 42nd St. New York City

CARBON BLACK
Godfrey L. Cabot, Inc.
Manufacturers for forty years.
940 Old South Bldg., Boston, Mass.
612 Metropolitan Bldg., Akron, O.

CARBON BLACK—*Aerfloted* Arrow Black for rubber compounding. Standard for grit-free uniformity.
J. M. Huber, Inc.
130 West 42nd St. New York

CARBON BLACK — *Black Goose Brand*—free from grit and impurities and imparts high tensile strength to the rubber compound.
Union Power Co., Inc.
310 United Bldg., Akron, Ohio. 607 Com'l. Nat'l. Bank Bldg., Shreveport, La. 25 West 43rd St., New York, N. Y.

CATALPO — The universal and standard rubber pigment now being used in treads, solids, tubes, carcass frictions, etc.
Moore & Munger
33 Rector Street
New York City

Confidence in* THE MARKET PLACE *is shown by the steady increase in listings since the inauguration of this section—and confidence is based on RESULTS!

THE MARKET PLACE Section Continued on Second Page Following.

MARKETS

Cottons and Fabrics

NEW YORK, June 17, 1926.

After many weeks of inactivity in trading and narrow fluctuations the cotton market has at last emerged from its rut and, although it was seriously at the expense of values, traders generally rejoiced that the long period of stagnation and practically pegged prices had come to an end. After weeks of "price spreads" which barely reached 20 points, the market showed last week a net fluctuation of 108 to 111 points on active new crop months, while the only active old crop month remaining, namely July, showed an extreme fluctuation of 81 points.

That July did not show as considerable a decline as the new crop months was due to the fact that belated shorts in that position took advantage of opportune moments to cover. As a result of this demand for July the premium in that month over October, which on the preceding Friday amounted to 53 points, had widened at the close of the week to 80 points.

Early this month July cotton sold at 18.35 since which time weather conditions throughout the South, combined with a general liquidation, brought it down to yesterday's low of 17.53. Similarly October has followed suit in a recorded drop from 17.57 on June 2 to 16.26 on the 15th. For the first week of this month the price variation on all positions was very slight but beginning a week ago a steady decline has been in effect and at this writing there is no knowing when bottom will be struck.

This condition is attributed largely to the continued excellent weather prevailing in the cotton belt. This improvement in the crop condition brought on a selling pressure in distant positions last week and while some resistance was offered for July in a covering demand, buying power was not sufficient to prevent price recessions.

Estimates of the 1926-1927 crop have been put at 14,160,000 bales, providing weather conditions remain normal. With the large carry-over at the close of the season which now seems certain, it would appear that further price declines are inevitable.

The beginning of this week brought irregularity of movement in the cotton market with prices ranging over a 30 point spread yesterday. An early gain in October position attracted contracts and selling continued until this position had lost 53 points, making a new low price of 16.14 for the year. Yesterday's closing prices were:

	High	Low	Close	Close June 2
July	17.74	17.49	17.53@17.55	18.35
Oct.	16.47	16.14	16.26@16.27	17.57
Dec.	16.47	16.20	16.32@16.33	17.52
Jan.	16.38	16.14	16.25	17.48
Mar.	16.52	16.28	16.40	17.64
May	16.60	16.40	16.49@16.52	——

Tire Fabrics

The demand for tire fabrics has continued good in view of the curtailed production prevailing in the tire industry. Several of the smaller tire companies are reported producing on full schedule, but the larger companies are still restricting production. There is little inquiry for contract deliveries most of the business being done in spot. The demand for tires which will undoubtedly increase with the advent of warm weather will materially reduce inventories and lead to an increased demand for fabrics. Prices have practically remained unchanged and are merely nominal in many positions.

CORD

Combed Peeler	lb.	.48 @	.50
Carded Peeler		.44 @	.45
Combed Egyptian uppers	lb.	.58 @	.60
Carded Egyptian uppers	lb.	.53 @	—

SQUARE WOVEN

17½-ounce Egyptian uppers, combed	lb.	Nominal	
17½-ounce Egyptian uppers, carded	lb.	.49 @	.50
17½-ounce Sakellarides, combed	lb.	Nominal	
17¼-ounce Peeler, carded	lb.	.45 @	.46

Sheetings and Ducks

SHEETINGS—Business in sheeting has been quiet since our last report with prices showing a downward tendency. Quotations reflect the lack of interest by buyers for all grades are off ¼ c. from earlier prices.

DUCKS—Orders for small quantities of ducks seems to be the extent to which business is being done. Shoe and mechanicals are inactive with prices somewhat easier. Mills are not busy and are not planning for any increase in production for some time to come.

SHEETINGS

40-inch 2.50-yard	yd.	.13 @	—
40-inch 2.85-yard	yd.	.11¼ @	—
40-inch 3.15-yard	yd.	.12½ @	—
40-inch 3.50-yard	yd.	.10 @	—
40-inch 3.75-yard	yd.	.08½ @	.08⅝
40-inch 4.25-yard	yd.	.07⅞ @	—

DUCKS

Belting and Hose	lb.	.35 @	.36
Enameling	lb.	.35 @	.40
Shoe Ducks	lb.	.39 @	.40
Single filling	lb.	.14½ @	.17½
Double filling	lb.	.17½ @	.19

J. H. LANE & CO.

Tire Fabrics Cord Fabrics

Enameling Duck Drill Sheeting

Osnaburg and Special Constructions

250 W. 57 Street, NEW YORK 323 South Franklin St., CHICAGO

ALL THE LEADERS

Are represented in this section. Purchasing agents can rely on the concerns listed as thoroughly reliable in every way.

The Market Place

Great Oaks From Little Acorns Grow

—and likewise a small beginning in the matter of advertising space is the first step to a bigger business!

Start Now by using listings in

THE MARKET PLACE

Rates are low— and results are sure.

CRUDE RUBBER — All Grades. Washed - Dried - Milled. *Send us Your Inquiries.*

Gibraltar Rubber Corp.
West New York, N. J.

DO YOU KNOW how cheaply space in this section may be obtained?

Write for Rates

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Importers and Dealers
Members Rubber Exchange of N. Y. and Rubber Exchange Clearing House
Henderson, Helm & Co., Inc.
44 Beaver St., New York
Weekly Market Review on Request

Over 30 chemical firms are using *The Market Place* regularly. The cost is moderate and results sure!

The Rubber Age
225 Fourth Ave., New York

CRUDE RUBBER
Plantations, Central America, African, Brazilian, Mexicans — *Direct Connections in all Rubber Centers in the World.*
Sanitas Rubber Products Corp.
17 Water St., New York

FABRICS— Spots and Contracts: Tire Fabrics, Enameling ducks, Tube Wrapping Tapes.

H. Frank Jones
395 Broadway New York City

CHEMICALS — Accelerators
Trimene Base, Heptene, Monex, Crylene, Lithex, Thiocarbanilide, Aniline Oil.
Clay—Mineral Flour, Seminole (Georgia).
Antioxidant—VGB, a proven product.
Labels—all-rubber two color brands.
Naugatuck Chemical Co.
1790 Broadway, New York.

CRUDE RUBBER
Importers
Members Rubber Exchange of N. Y., Inc. and Rubber Exchange Clearing House, Inc.
Charles T. Wilson Co., Inc.
82 Beaver St., New York
AKRON OFFICE: 507 Second Nat'l. B'ldg.

FABRICS—Tire, cords, enameling ducks, drills, sheetings, osnaburgs.

J. H. Lane & Co.
250 West 57th St. New York City

CHEMICALS and compounding ingredients; Clay, Whiting, Accelerators, Mineral Rubber.

R. T. Vanderbilt Co.
50 East 42nd St. New York City

DIPHENYLGUANIDINE
Aero Brand, product of the highest purity from dependable source of supply.
American Cyanamid Co.
511 Fifth Ave. New York City.

FABRICS—Tire fabrics—coarse builders, chafers, breakers in all grades.
New England Southern Mills
LAWRENCE & CO.
24 Thomas St. New York
Boston, Philadelphia, Chicago, St. Louis, San Francisco

CHEMICALS and pigments for the rubber trade. Complete stocks.
Wishnick-Tumpeer Chemical Co.
CHICAGO CLEVELAND NEW YORK

DRY KILN—for drying crude rubber and chemicals—Hunter Process.
Carrier Engineering Corporation
750 Frelinghuysen Ave. Newark, N. J.

FABRICS—Stockinets, Jersey Cloth and Special Fabrics for the Rubber Industry.
U. S. Knitting Co., Inc.
Pawtucket, R. I.

CONSULT BANNER
Before You Buy
TIRE BUILDING MACHINES
The Banner Machine Co.
Columbiana, Ohio
Paul A. Frank, Akron, Ohio, Agent.

ENGINEERS
Machinists, Iron and Steel Founders
Standard and Special
Rubber Working Machinery
The Adamson Machine Co.
Akron, Ohio

FACTICE—Prevents blooming, makes colors fast and a smoother batch.
Stamford Rubber Supply Co.
Stamford, Conn.

THE MARKET PLACE Section Continued on Second Page Following.

RUBBER MARKETS

Scrap Rubber

NEW YORK, June 17, 1926.

The spottiness of the crude rubber market in the past few weeks has been reflected in scrap rubber with the result that the spot market is spotty while futures are low. Quotations are considerably under those reported early in the month. Prices follow:

Auto tire peelings		.01¼	@	.01⅜
Standard White auto	ton	40.00	@	42.50
Mixed auto	ton	26.00	@	27.00
Bicycle tires	ton	15.00	@	17.00
Clean solid truck tires	ton	34.00	@	36.00
Boots and shoes		.01¾	@	.01⅞
Aretics, untrimmed		.01	@	.01⅛
Aretics, trimmed		.01⅛	@	.01⅜
Inner tubes, No. 1		.08	@	.08¼
Inner tubes, No. 2, compounded		.06	@	.06¼
Air Brake Hose	ton	22.00	@	24.00
Rubber hose	ton	20.00	@	—

Reclaimed Rubber

NEW YORK, June 17, 1926.

Reclaimers report an unsettled market. Inquiries and demand for deliveries have been fairly large but they have not been as steady as has been the custom for some months past. Rubber manufacturers are still running below capacity but weather conditions are expected to increase tire output very shortly. Quotations follow:

Friction (Uncured)

No. 1	lb.	.40	@	.42
No. 2	lb.	.30	@	.32

High Tensile Black

Super-Reclaim No. 1	lb.	.24	@	.25
" " No. 2	lb.	.18	@	.19

Shoe

Unwashed	lb.	.10½	@	.10¾
Washed	lb.	.12¾	@	.13

Tube

No. 1 (Floating)	lb.	.20	@	.22
No. 2 (Compounded)	lb.	.18	@	.19

Tires

Black, unwashed	lb.	.10¾	@	.11
Black, washed	lb.	.12	@	.12¼
Black, selected tires	lb.	.12½	@	.12¾
Dark Gray	lb.	.14½	@	.15½
Light Gray	lb.	.16½	@	.17½
White	lb.	.18	@	.19
Truck, Heavy Gravity	lb.	.10	@	.10½
" Light Gravity	lb.	.10½	@	.11

Miscellaneous

Mechanical Blends	lb.	.05	@	.09
Red, High Grade	lb.	.18	@	.19

Crude Rubber

NEW YORK, June 16, 1926.

Trading on the rubber market during the past two weeks has been extremely quiet. A slight increase in consumer interest was noted, but factory buying has been only on a small scale for immediate use. Tire inventories are still large owing chiefly to the unseasonable weather. Manufacturers are not expected to cut prices and until the demand for tires increases considerably the market will undoubtedly continue to drag with most of the business of a speculative nature.

The advance of ½d in London prices on the 3rd was reflected in firmer prices on the Exchange where trading was rather active, 659 lots being sold. Little was done on the outside. Spot remained at 42. Some light factory buying took place in the outside market on the 4th by buyers forced into the market. A net advance of 30 to 50 points was recorded in Exchange prices but trading was only fair. Pressure was chiefly on July and August positions. Prices remained unchanged on Saturday with spot at 42½c but practically no business done.

During the week London rubber stocks increased 706 tons, to a total of 20,883 tons as compared with 20,177 tons the previous week and 5,456 tons a year ago.

The market reopened on the 7th with an almost total lack of consumer interest. Exchange prices sagged with the drop in London prices. Opening bids were 130 to 210 below seller's call, but prices remained practically unchanged. The demand switched from June to July.

Prices firmed slightly on the 8th with an advance of ½d in London prices, spot closing at 43c and prices on the exchange showing net gains of 50 to 80 points. Trading however was extremely dull.

For the next few days trading continued light with prices low. Business on the exchange was fair but there was little doing on the outside. Attention was directed toward forward positions chiefly August, September and October. June closed at noon on the 10th. July brought 39.80 and there was little change in the other positions. Some moderate factory buying for nearby needs was evident on the 11th. Prices rose steadily with spot closing at 43. July and August advanced 110 to 120 points respectively and monopolized most of the trading on the exchange. The advance in London prices on the 12th had little effect on the local market. Only 80 lots were turned over on the exchange and the outside market was practically closed. July-Sept. closed at 41.30 and spot at 43½.

Stocks on the London market were 22,282 tons an increase of 1,399 over the previous week, and compared with 5,631 tons a year ago.

A slight increase of dealer and speculative buying has marked the past few days and prices rose a little on the 15th. Spot sold as high as 44c. Prices on the exchange advanced about 100 points due to buying interest and lack of sellers, sellers awaiting the report of the Rubber Association's report on May operations. Closing prices are shown in table at the bottom of this page.

JUNE 16 OPEN MARKET PRICES

Plantations—			
Ribbed Smoked Sheets			
Spot	.43	@	—
June	.43	@	.43½
July/Sept.	.41	@	.41½
Oct./Dec.	.41	@	.41¾
First Latex, crepe spot	.44	@	—
Amber Crepe, No. 2, spot	.38	@	—
" " No. 3	.37	@	—
" " No. 4	.36	@	—
Brown Crepe, Rolled	.35	@	—
" " Clean, thin	.37	@	—
" " Specky	.33	@	—
Pontianac—			
Bangermassin	Nominal		
Palembang	Nominal		
Prime Pressed	Nominal		
Sarawak	Nominal		
Paras—			
Up-river Fine	.34	@	—
" Medium	.30	@	—
" Coarse	.21	@	—
Acre Bolivian, fine	.39	@	—
Tapajos, fine	—	@	.35½
Islands, fine	.33	@	.33½
Cut Beni Bolivian, fine	.39	@	.40
Caucho Ball—			
Upper, shipment	.22	@	—
Centrals—			
Corinto, scrap	.21	@	—
Esmeraldo, sausage	.21	@	—
Guayule, w and d	.33	@	.34
Africans—			
Benguela, No. 2	Nominal		
Congo, upper, black	Nominal		
" " red	Nominal		
Kassai, Prime Red	Nominal		
Balata—			
Block, Columbia	—	@	.65
" Cuidad	—	@	.68
Surinam, sheet	—	@	.72
Gutta Percha—			
Siak	.32	@	.33
Red Macassar	3.00	@	3.50
Chicle—			
Mexican, Yucatan	—	@	.58

LONDON MARKET

Standard Ribbed Smoked Sheets—	
Spot	20¾d
July	20¾
July/Sept.	20¾
Oct./Dec.	21
Jan./March	21½

SINGAPORE MARKET

Standard Ribbed Smoked Sheets—	
Spot	19½d
July	19⅝
Oct./Dec.	19⅞

Closing Prices on Rubber Exchange of New York, Inc.

JUNE 3 to JUNE 16

	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	SALES*
June 3	42.20	39.90	39.50	39.50	39.60	39.50	39.50	40.10	40.20	40.30	40.30	40.30	....	659
4	42.60	40.00	39.90	39.80	40.20	39.80	40.00	40.50	40.80	41.00	41.00	41.00	....	350
5	42.40	39.90	39.80	39.80	40.00	39.80	40.00	40.60	40.60	41.00	41.00	41.00	....	26
7	42.10	39.30	39.40	39.50	39.90	39.80	39.70	40.00	40.00	40.30	40.30	40.20	....	258
8	42.90	39.90	39.90	39.90	39.90	39.90	40.20	40.30	40.50	41.00	41.00	41.00	....	378
9	42.60	40.10	40.00	40.10	40.30	40.30	40.30	40.40	40.30	40.50	40.50	40.80	....	475
10	42.60	39.80	39.70	39.80	40.00	40.00	40.00	40.20	40.20	40.20	40.20	40.20	....	485
11	....	40.60	40.80	40.80	41.00	41.00	41.00	41.30	41.30	41.30	41.30	41.30	43.40	453
12	....	41.30	41.30	41.30	41.70	41.70	41.70	41.70	41.80	42.00	42.00	42.00	44.10	80
14	....	40.50	40.40	40.70	40.80	40.80	40.90	41.00	41.00	41.10	41.10	41.10	43.30	119
15	....	41.80	41.80	41.80	42.00	42.00	42.00	42.20	42.20	42.20	42.20	42.20	44.60	236
16	....	41.00	41.00	41.10	41.50	41.50	41.60	41.70	41.70	41.70	41.70	41.70	43.80	430

(*) In lots of 2½ tons each.

The Market Place

3.

GUAYULE—"Duro" Brand washed and dried ready for compounding.

Continental Rubber Co.
120 Broadway New York

MOLDS AND CORES—Tire building equipment; general machine work.

The Akron Equipment Co.
Akron, Ohio

RECLAIMED RUBBER
of Standardized Quality.
NO. 188 FOR TUBES
Philadelphia Rubber Works Co.
New York Akron Philadelphia

LINERS — PROCESSED
For
Various Rubber Stocks
The Cleveland Liner & Mfg. Co.
5508 Maurice Ave., Cleveland, O.

MOLDS & CORES—Tire building machines; tire finishing stands; tubing machines; hydraulic presses.

The Akron Standard Mold Co.
Akron, Ohio

RECLAIMED RUBBER—for all purposes.

Rubber Regenerating Co.
Naugatuck, Conn.

MACHINERY—
Heater Presses, Molds and Cores, Tubing Machines.
The Williams Foundry & Mach. Co.
"In Business Since 1888"
Akron, Ohio

MOLDS & CORES—for automobile tires; general machine work.

Kuhlke Machine Co.
Akron, Ohio

RECLAIMED RUBBER
A standardized grade for every requirement.
U. S. Rubber Reclaiming Co., Inc.
100 E. 42nd St., New York, N. Y.
"43 Years Serving the Industry Solely as Reclaimers"

MANDRELS--CIRCULAR
and Economy Calender Shells
Prompt Service—Let us quote you.
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"NU-GUM" RUBBER
Produced from No. 1 Floating Tubes. Absolutely pure — no oils —no compound added. *Specific Gravity*, .98.
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RECLAIMED RUBBER
The Xylos Rubber Co.
Akron, Ohio
CAPACITY 250,000 POUNDS DAILY

MICA — Water Ground and Water Floated — 160 Mesh —Absolutely Free from Grit. Akron Stocks, also Factory Shipments.
The C. P. Hall Co.
116 Central Savings & Trust Bldg., Akron

PINE TAR — Retort "Sunny South", "Pentarco", "American". Brands for Tires, Tubes, Mechanicals,—Reclaim. *The Best Softener*
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P. O. Box 356 Jacksonville, Fla.
Agents in New York, Chicago, Cleveland.

RED OXIDE—A special grinding, guaranteed uniform in color and quality.
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THE MARKET PLACE Section Continued on Second Page Following.

Accelerators
Colors
Mineral Rubber
Compounding Materials

RUBBER CHEMICAL and COMPOUNDING MATERIAL MARKETS

Softeners
Vulcanizing Ingredients
Rubber Substitutes

NEW YORK, June 17, 1926—The expected improvement in manufacturing conditions in the several rubber centers have not materialized to any large degree up to this writing with the result that movement of chemicals and compounding materials has been rather spotty. Rumors from Akron state that one of the larger rubber companies is planning a two-week vacation shortly, but the report could not be verified. Accelerators, blacks and zinc oxides have as a result been quiet but increasing warm weather is expected to make a decided improvement in conditions before very long. The main price change to report is on sulphur which moved up on the first of the month as a result of higher crude prices. Other materials are showing an upward trend but quotations as a whole have not changed. Prices follow:

ACCELERATORS

Organic			
A-7	lb.	.65 @	.80
A-40	lb.	.65 @	.80
A-19	lb.	.70 @	.85
A-11	lb.	.70 @	.85
Aledhyde ammonia, crystals	lb.	.82 @	—
Aniline oil, drums	lb.	.17 @	.17½
"BB"	lb.	1.05 @	1.07
Crylene	lb.	.70 @	—
paste	lb.	.50 @	—
Di-Ortho-Tolylguanidine	lb.	1.05 @	1.08
Diphenylguanidine	lb.	.85 @	.88
Ethylidene aniline	lb.	.60 @	.65
Excellerex	lb.	.35 @	.40
Formaldehyde-Aniline	lb.	.40 @	.42
Grasselerator 102	lb.	.80 @	.82
Grasselerator 552	lb.	4.80 @	5.00
Grasselerator 808	lb.	1.25 @	1.50
Heptone	lb.	.55 @	—
Hexamethylene-tetramine	lb.	.80 @	.82½
Monex	lb.	3.75 @	5.00
Paraphenylenediamine	lb.	1.25 @	1.30
Piperidine-Piperidyldithio-Carbamate	lb.	4.80 @	5.00
R & H 50	lb.	.60 @	—
Super-Sulphur No. 1	lb.	.50 @	—
Super-Sulphur No. 2	lb.	.18 @	.25
Tensilac, No. 41	lb.	.65 @	—
Thiocarbanilide, kegs	lb.	.26 @	28½
Trimene	lb.	.75 @	—
base	lb.	1.20 @	1.35
Triphenylguanidine	lb.	.70 @	.73
Tuads	lb.	4.50 @	5.00
Vulcone	lb.	.75 @	.79
Z. 88	lb.	.75 @	1.00
Zimate	lb.	5.00 @	—
Inorganic			
Lead, sublimed blue	lb	.10 @	.10½
Lead, white	lb.	.10¾ @	—
Litharge, domestic	lb.	.12 @	—
Magnesia, calcined, light	lb.	.12 @	20
heavy	lb.	.04½ @	—

COLORS

Blacks (See Compounding Materials)			
Blues			
Prussian	lb.	.32 @	.34
Ultramarine	lb.	.08 @	.35
Browns			
Sienna, Italian	lb.	.04 @	.14
Umber, Turkey	lb.	.04 @	.06
Greens			
Chrome, light	lb.	.31 @	.33
medium	lb.	.32 @	.35
dark	lb.	.35 @	.40
commercial	lb.	.08 @	.11
Chromium Oxide, bbl.	lb.	.30 @	.31
Reds			
Antimony crimson, 15/17	lb.	.27 @	—
sulphur free	lb.	.48 @	.50
vermillion 15/17	lb.	.37½ @	—
golden, 15/17 F.S.	lb.	.16 @	—
pentasulphide, pure,	lb.	.33 @	.35
15/17 F.S.	lb.	.26 @	.30
Indian English	lb.	.11 @	.15
Oximony	lb.	.13¼ @	—
Para toner	lb.	.80 @	.90
Red oxide, reduced	lb.	.11 @	—
pure	lb.	.12 @	.14
Blue Ridge	lb.	.12 @	.14
Toluidine toner	lb.	1.80 @	2.10
Venetian red	lb.	.01½ @	.05
Vermillion, quicksilver, English	lb.	1.40 @	1.45
Whites			
Albalith	lb.	.05⅝ @	.06⅛
Lithopone, Akeolith	lb.	.05⅝ @	.06
Litnopone, Azolith	lb.	.05⅝ @	.06⅛
Zinc Oxide—American Process XX red	lb.	.07½ @	.07¾
Kadox, black label, kegs	lb.	.10⅞ @	.11⅛
blue " " "		.09⅞ @	.10⅛
red " " "		.08⅞ @	.09⅛
American Azo: ZZZ (lead free)	lb.	.07¼ @	.07¾
Zz. (under 5% leaded)	lb.	.06⅞ @	.07⅜
Zinc Oxide—French Process White seal	lb.	.12¾ @	—
Green seal	lb.	.11⅝ @	—
Red seal	lb.	.10⅝ @	—
Yellows			
Chrome	lb.	.17½ @	.18
Ocher, French medium	lb.	.03¼ @	.03⅜
domestic	lb.	.01¾ @	.02½

COMPOUNDING MATERIALS

Aluminum Flake (f.o.b. plant)	ton	21.85 @	24.50
hydrate light	lb.	.16 @	.17
Ammonia carbonate	lb.	.13½ @	.17½
Arc-O Sil	ton	8.00 @	11.00
Asbestine	ton	16.00 @	18.50
Barium carbonate	lb.	.03½ @	—
Barium Dust	lb.	.05 @	.06
Barytes southern off-color,	ton	12.00 @	18.00
Western prime white	ton	23.00 @	—
imported	ton	27.00 @	36.00
Basofor	lb.	.04½ @	—
Black: Arrow "Aerfloted"	lb.	.08 @	.12
Bone Black	lb.	.05½ @	.11
Carbon "	lb.	.09 @	.13
Drop "	lb.	.07½ @	.14
Ivory "	lb.	.12 @	.45
Lamp "	lb.	.12 @	.40
Micronex	lb.	.09 @	.13
Thermatomic carbon	lb.	.05 @	—
Blanc fixe dry f.o.b. works	lb.	.04 @	.04½
Carrara filler	lb.	.01¾ @	.02
Catalpo (fact.)	lb.	.02 @	—
Chalk	lb.	.02½ @	.04½
Clay, China, domestic	ton	15.00 @	25.00
Aerfloted Suprex	ton	13.00 @	20.00
Blue Ridge, Dark	ton	9.00 @	—
" " Light	ton	12.00 @	—
Dixie	ton	20.00 @	35.00
Langford	ton	12.00 @	22.00
Mineral Flour, c. l. fob mine	ton	17.00 @	20.00
Seminole, c. l. fob mine	ton	16.00 @	—
Glues, extra white	lb.	.20 @	.29
medium white	lb.	.18 @	.24
common bone	lb.	.12 @	.14
Graphite flake, bbls.	lb.	.06½ @	.12
Magnesia, carbonate	lb.	.07½ @	.08½
Mica, powdered	ton	90.00 @	100.
Rotten Stone (powdered)	lb.	.02½ @	.04½
Soapstone, powdered	ton	15.00 @	22.00
Starch, powdered	cwt.	3.30 @	3.70
Talc, domestic	ton	16.00 @	20.00
Terra Alba	cwt.	1.25 @	2.00
Tripoli, white	lb.	.02 @	.02¼
Whiting, commercial	cwt.	1.00 @	1.15
English cliffstone	cwt.	1.50 @	—
Onaker	ton	13.00 @	15.00
Superfine	ton	10.00 @	12.00
Sussex	ton	8.00 @	10.00
Wood pulp XXX	ton	35.00 @	—
" " X	ton	25.00 @	—

MINERAL RUBBER

Genasco (factory)	ton	50.00 @	52.00
Granulated M.R.	ton	33.00 @	38.00
Hydrocarbon, Hard	ton	29.00 @	35.00
Hydrocarbon, Soft	ton	29.00 @	—
320/340 M.P. hydrocarbon (c. l. factory)	ton	47.00 @	52.00
300/310 M.P. hydrocarbon (c. l. factory)	ton	42.00 @	47.00
Paradura	ton	70.00 @	72.50
Robertson, MR, solid	ton	35.00 @	75.00
M.R. (gran)	ton	42.00 @	80.00

SOFTENERS

Acids			
Muriatic, 20%	cwt.	.95 @	1.05
Nitric, 36 degrees	cwt.	5.00 @	5.25
Sulphuric, 60 degrees	ton	10.50 @	11.50
66 degrees	ton	15.00 @	16.00
Tartaric, crystals	lb.	.29 @	—
Alkalies			
Caustic soda, 76%	cwt.	3.76 @	3.91
Soda ash, 58% C.L.	cwt.	1.43 @	1.45½
Oils			
Castor, No. 3 bbls.	lb.	.12¾ @	—
Corn, crude, bbls.	lb.	.11¼ @	—
refined	lb.	.13 @	—
Cottonseed, crude		.10½ @	—
Cycline	gal.	.26 @	.34
Glycerine, C.P. drums	lb.	.23½ @	.24
Linseed, Raw C.L. bbl.	lb.	.11 @	—
Liquid Rubber	lb.	.12 @	—
Moldrite	lb.	.05 @	.06
Palm, Lagos	lb.	.08½ @	.08¾
Niger	lb.	.08⅛ @	.08¼
Peanut, domestic crude	lb.	.12½ @	—
Petrolatum, white	lb.	.11¼ @	.11¾
amber	lb.	.03⅞ @	.04
dark amber	lb.	.03⅝ @	.03¾
Pine, steam distilled	lb.	.60 @	.65
Rapeseed, refined	gal.	.84 @	.99
blown	gal.	1.00 @	—
Rosin, first rectified	gal.	.60 @	.62
second rectified	gal.	.65 @	.67
Soya Bean, crude		.13¼ @	.13½
Synthecite	lb.	.06 @	—
Tar, commercial	gal.	.30 @	.32
Resins and Pitches			
Pitch, Burgundy	lb.	.07 @	—
coal tar	gal.	.05½ @	.06
pine	bbl.	7.50 @	8.50
Rosin, grade K	bbl.	13.80 @	—
Tar Retort	bbl.	16.00 @	17.00
kiln burned	bbl.	15.00 @	16.00
Tackol	lb.	.09 @	.15
Solvents			
Alcohol denatured, No. 1 bbls.	gal.	.34 @	.47
Benzol, 90%	gal.	.30 @	—
pure		.30 @	—
Carbon bisulphide	lb.	.05½ @	.06¼
tetrachloride	lb.	.07 @	.08
Motor gasoline, steel bls.	gal.	.21 @	—
Naptha, V. M. & P.	gal.	.15¼ @	—
Turpentine, spirits	gal.	.86 @	.87
wood	gal.	.80 @	.84
Waxes			
Beeswax	lb.	.60 @	.62
Carnauba, No. 1	lb.	.50 @	.51
Ceresin, white	lb.	.09 @	.10
Montan, crude	lb.	.06 @	.06½
Ozokerite, black	lb.	.24 @	.25
green		.26 @	.30
ParaffineWhiteA.M.P.	lb.	.05¼ @	.05¼
Yellow A.M.P.	lb.	.05¼ @	.05⅝
Sweet Wax	lb.	.10 @	—

ANTI-OXIDANTS

Age-Rite	lb.	.85 @	.90
Antox	lb.	.88 @	—
VGB	lb.	.70 @	—

SUBSTITUTES

Black	lb.	.08½ @	.14
White	lb.	.10 @	.17
Brown	lb.	.10 @	.15
Brown factice	lb.	.10 @	.16
White factice	lb.	.10½ @	.17½

VULCANIZING INGREDIENTS

Black hyposulphite	lb.	.18 @	.20
Ethyl Chloride, Cyl.	lb.	.55 @	—
" " Drums	lb.	.45 @	—
Sulphur Chloride (drums)	lb.	.08½ @	—
Sulphur flour Superfine, bags	cwt.	2.20 @	—
" bbls.	cwt.	2.55 @	—
100% pure, refined, bags	cwt.	2.60 @	—
bbls.	cwt.	2.85 @	—

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Index to Contents

NEWS SECTION

Black Urges That Dealers Demand Reduction ... 275
Tire Price Decreases Announced 275
Effect of Adoption of Balloons by Ford 276
Speakers Announced for Rubber Symposium ... 277
Gas Tubing Manufacturers Registered 278
27 x 4.40 Tires on New "Whippet" 279
Personals of the Trade 281
O'Neil Predicts Good Sales 282
Rubber Heel Sales to Manufacturers 283
New Statistical Service Inaugurated 284
Factory Construction and Operations 285
Factory Construction and Operations 285
Chromilite for Molds and Mandrels 287
Exchange Amends Trading Regulations 288
Rubber Goods 'Round the World 291
Chemists to Visit Akron Plants 292

FEATURES and DEPARTMENTS

The Native Dutch Rubber Industry 296
New Rubber Coagulants 299
Improved Rubber Mixing Rolls 300
London Letter 293
Editorial Page 295
Book Department 316-317
Watching the News 304

MARKETS and STATISTICS

Statistics 305-308
Cotton and Fabric Market 310
Crude, Reclaimed and Scrap Rubber 312
Chemicals and Compounding Materials 314

ADVERTISING INDEX ..... Page 317
MARKET PLACE LISTINGS ..... Pages 309, 311, 313, 315

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With the Editor

Although the first half of 1926 has closed without the rubber industry having made the new record for business and prosperity that many had hoped for, it must be said that the view back over the last six months is not discouraging. Trade has been slow rather than bad, and the industry is certainly on a surer footing than it was at the beginning of the year. The unfavorable weather, after having set a record, has at last relented in favor of a more active demand for tires. In other lines, sales have been good if not record-breaking, and such financial statements as have appeared are wholly satisfactory in view of the conditions which have obtained.

A number of news items in this issue of THE RUBBER AGE sound a note of optimism for better business during the last half of the year. For such abundant faith in the rubber business surely no one can be blamed. Certainly the market for rubber products of all sorts is constantly expanding and will continue to do so. Rubber is fundamental; without losing on any front it pushes its way into territory formerly held by other materials. And in its ever-widening field there is no permanent problem. The troubles of one season are forgotten a few months hence. Those who think the industry faces a good six months are no doubt in the right.